



OWNER'S MANUAL

ALPHA

Updated in July, 2020

usimeca

Welcome

New owner of the Rear Loader

We appreciate your purchase of the rear loader designed and manufactured by **usimeca** - Indústria Mecânica S.A., a 100% Brazilian company. The equipment built by our Product Engineering Department has the quality and capacity to provide our customers with many years of use, with low maintenance cost.

To meet market needs, the components were manufactured with the highest production technology, making its operation simple, easy and as quiet as possible; these characteristics can be observed from the start of operation.

The following manual was prepared to provide safety in operation and ease in maintenance. Follow the procedures described herein and you will be able to maximize the service life of your rear loader.

All information, illustrations and specifications contained in this manual are based on the latest information available for manufacture on the date of this printing. Therefore, as a result of our policy of continuously pursuing improvements in our processes and products, we reserve the right to make changes at any time without prior notice or obligation to make such changes to already manufactured equipment.

If you have any questions regarding proper operation or maintenance of your rear loader, please do not hesitate to contact our network of authorized representatives or our factory in Rio de Janeiro directly, through the following telephone numbers / email addresses +55 21 2107 4015 / assistencia@usimeca.com.br (Technical Assistance) and +55 21 2107 4018 / pecas@usimeca.com.br (Parts Sales).

Thank you again for your choice.

Board of Directors

usimeca – Indústria Mecânica S.A.

Contents

A. GENERAL CONSIDERATIONS	5
B. SAFETY PRECAUTIONS.....	6
NOTES ABOUT SIGNALS AND SYMBOLS	6
PRIORITIES FOR STARTUP	7
ORIENTATIONS FOR SAFE OPERATION	8
C. WARRANTY.....	12
D. OPERATION	16
1. OVERVIEW	16
OPERATOR / DRIVER COMMUNICATION SYSTEM	17
AUTOMATIC THROTTLE ADVANCE	17
THROTTLE ADVANCE BUTTON	18
POWER TAKE-OFF.....	19
PARAMETERIZATION	23
FRONT CONTROL UNIT	23
ELECTRIC FRONT CONTROL UNIT	24
REAR CONTROL UNIT	25
EMERGENCY STOP.....	26
SIDE HATCH (OPTIONAL).....	27
TAILGATE LATCHING	27
CONTAINER HANDLING SYSTEM	28
2. LOADING AND PACKING PROCEDURE	36
START OF OPERATION PROCEDURES: BEFORE LEAVING THE GARAGE	36
START OF OPERATION PROCEDURES: WHEN REACHING THE COLLECTION ROUTE	36
PACKING CYCLE WITH MANUAL OPERATION.....	39
SEMI-AUTOMATIC PACKING CYCLE	39
AUTOMATIC PACKING CYCLE	40
LOADING TROUBLESHOOTING	43
3. UNLOADING	45
PROCEDURE FOR UNLOCKING THE TAILGATE.....	45
RAISING THE TAILGATE	47
EJECTING THE LOAD	48
TAILGATE CLOSING	48
BEFORE LEAVING THE LANDFILL OR TRANSFER STATION	49

E. MAINTENANCE	50
1. PREVENTIVE MAINTENANCE.....	50
EXTERNAL / INTERNAL WASHING.....	51
POWER TAKE-OFF.....	52
AUXILIARY POWER TAKE-OFF COUPLED TO THE TRANSMISSION.....	53
REAR POWER TAKE-OFF (REPTO)	53
PUMP	53
PUMP COUPLED TO THE POWER TAKE-OFF	54
PUMP COUPLED TO THE FLYWHEEL (REPTO) OR TO THE “WET-SPLINE” PTO.....	55
HYDRAULIC SYSTEM	56
HYDRAULIC OIL	56
SUCTION LINE FILTER (STRAINER)	59
RETURN LINE FILTER.....	59
PRESSURE LINE FILTER	61
CYLINDERS.....	61
SLIDE PANEL	64
EJECTOR PANEL	66
MOUNTING SYSTEM.....	67
TUBES AND HOSES	68
TAILGATE SEALING SYSTEM.....	68
PINS	69
INSPECTION	70
LUBRICATION	70
AUTOMATIC TAILGATE LATCHING	72
TIPPER BAR.....	74
REEVING CYLINDER	75
CART LIFTER.....	76
2. HYDRAULIC SYSTEM ADJUSTMENT PROCEDURE.....	77
PARKER ML-25 CONTROL UNITS.....	77
SAUER-DANFOSS CONTROL UNITS.....	82
F. ATTACHMENTS	86
HYDRAULIC DIAGRAM - MANUAL LATCHES	86
HYDRAULIC DIAGRAM - AUTOMATIC TAILGATE LATCHING	87
Maintenance Checklists	88

A. General Considerations

Important

The main functions of the rear loader are, safely and efficiently: loading, packing, transporting and unloading solid waste.

This manual describes simply and clearly how these functions are performed. If you need more details about the equipment operation description, please contact our Technical Assistance Service, where trained and experienced employees will be able to guide you.

Some terms will be widely used, so prior knowledge of their meaning is important:

LOADING – it is the operation performed when garbage is dumped into the hopper of the tailgate assembly. At this time, the sweep and slide panels, which push and compact garbage into the body, will be in “rest” position.

PACKING - when the operator starts the cycle, the sweep panel opens and the sweep and slide panels move backward over the load.

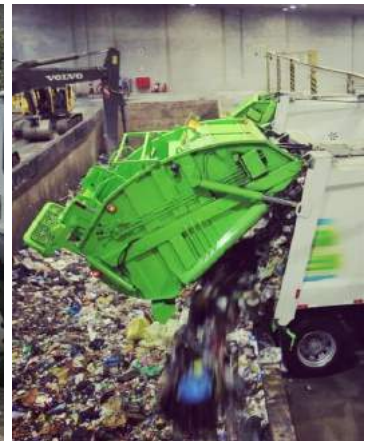
UNLOADING - at the appropriate location - landfill or transfer station - unloading is performed in two simple steps: first the tailgate is opened by the operator, and second the ejector panel is engaged, ejecting the load out of the equipment.



Loading



Packing



Unloading

After this loading, packing and unloading process, the equipment will again be ready to repeat the operation.

B. Safety Precautions

Notes about Signals and Symbols

Throughout this manual, the potential hazards are indicated in boldface text. These hazards may pose a risk to life and physical integrity or may cause damage to equipment and company property.

Always follow the safety instructions and act with extremely caution when there is an element of risk involved!

The safety indications are accompanied by symbols, which clearly indicate that there is an element of risk involved.

The symbols and their respective meanings are listed below:



Danger!

Risk to life!



Attention!

Risk of destruction or damage to the vehicle!



Warning!

Risk to physical integrity or of crushing limbs



Notes:

Provides important additional information!

Priorities for Startup

1. Never operate the equipment wearing jewelry or loose clothing; these items can get stuck in the equipment, causing serious injury. Wear safe clothing and protection equipment.
2. Never operate the equipment under the effect of alcohol, narcotics or medications that alter your awareness. Operators that act in this manner represent a major risk to themselves and to others.
3. Perform an "inspection around" the chassis according to the manufacturer's instructions, as well as an "inspection around" the rear loader according to the instructions in this manual. Never start an operation if you find items malfunctioning. When this occurs, notify the head of operations immediately, keep the vehicle braked, the power take-off system disengaged and the key out of the ignition. If you need to move away from the equipment to ask for help, leave something to signal that the equipment has a problem and should not be used before technical assistance, such as sticking an easy-to-remove adhesive on the vehicle's dashboard.
4. Technical assistance services must be performed with proper tools and by duly accredited persons, always following the manufacturers' instructions.
5. Perform a thorough inspection around the equipment and make sure there is no person or obstruction before starting the equipment.
6. The container handling system is a critical point in the equipment. As such, they should be operated by properly trained personnel and have maintenance performed by the manufacturer or accredited service.
7. Inspect all cables, hooks and chains daily. Replace all broken or worn parts.
8. Before operating the vehicle, the driver must be familiar with the employer's training program related to traffic rules, hazard notices and manual signals.
9. Make sure you know where to request assistance in case of emergency.

 **Danger!**  **Warning!**  **Attention!**

Get to know the equipment. Get to know the location of controls, gauges, operating instruments and protection signals.

✓ **Notes:**

The height of the hopper may change when a container handling system is placed. Thus, make sure that this height is not outside the safety and operating standards.

Orientations for Safe Operation

Responsibility of the Driver and Operators

- Do not attempt to operate the equipment without proper training.
- Use appropriate signal lights and wear proper clothing and shoes.
- Never place your head, fingers or any part of your body on sharp or pointy objects that are in the equipment.
- Never enter the equipment unless the telescopic cylinder is depressurized, the power take-off disengaged and key out of the ignition and stored in your pocket.
- Never use the control levers or hoses as an aid to climb or descend from the equipment. They are flexible and may not provide the necessary support, causing serious injury to the user, in addition to damaging equipment components.
- All doors and openings must be closed and locked while the equipment is in operation.
- Make sure assistants are in sight before operating or moving the equipment.
- Make sure there is enough space to operate the equipment.
- Always make sure that everyone is far away when lifting or lowering the tailgate. It is the operator's responsibility to warn people not to remain or transit under the equipment.
- The ejector panel should be retracted when traveling a long distance with the unloaded equipment.
- Never use the equipment to pull or push other vehicles.
- Make sure the rear alerts are in perfect working order.
- Never use the equipment to transport containers.
- Never use the container handling steel cable for towing or pulling other vehicles or objects.
- Do not move the vehicle with a container docked on the equipment.
- Do not move the vehicle with the steel cable loose.
- Keep the vehicle braked before docking or lifting the container.

Driver's Responsibility

- Move the vehicle as slowly as possible, without stopping, when in reverse.
- Always make sure the area is clear when using reverse gear.
- Do not move in reverse for long distances; obey the instructions of the Traffic Code. If the distance to be traveled is longer than established, do so in stages, always observing if the area to be traveled is clear.
- When driving the equipment, wear the seatbelt.
- Keep the vehicle braked whenever leaving the cab.
- Stop the vehicle immediately when the warning lights come on.
- The automatic speed-up system should be "off" between collections and when the vehicle is parked. This prevents increased engine speed if the control panel levers are triggered.
- In vehicles with automatic transmission, the PTOs will only be engaged when the transmission lever is in neutral position.
- Use only the defined locations for transporting people. Long distances should not be travelled with people outside the chassis cab. Do not allow anyone to go down or up on the steps with the equipment in motion.
- Never dump garbage down hillsides, against garbage piles or in hill craters.
- Do not move the equipment while the tailgate is raised, except when in the unloading procedure or when necessary to remove any waste that is left before lowering the tailgate.
- To prevent injury to persons or damage to equipment, lower the tailgate slowly.

Operator's Responsibility

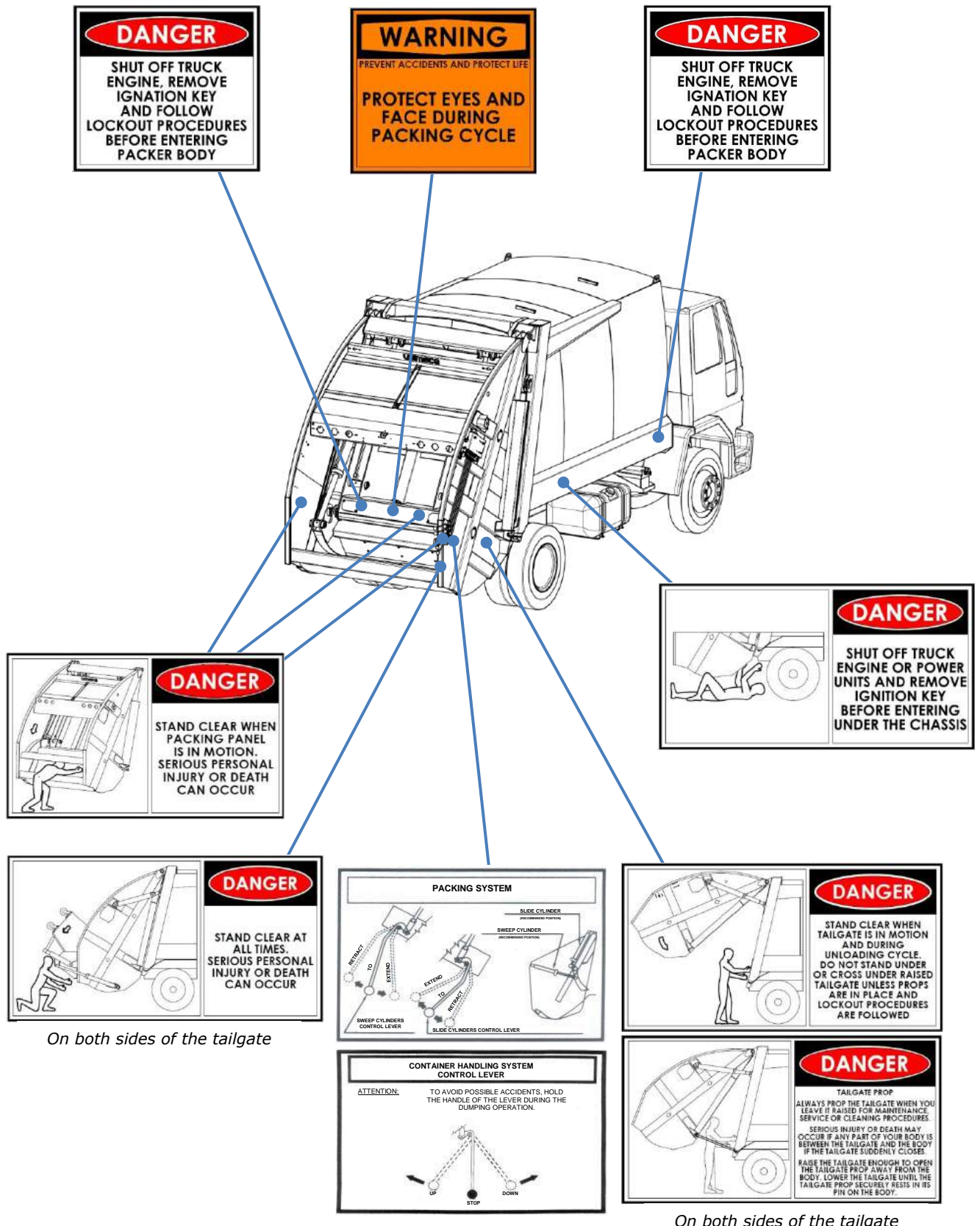
- It is the equipment operator's responsibility to ensure proper operation, in accordance with the manufacturer's instruction manual, the Traffic Code and other safety regulations.
- Never try to remove any material that is higher than your waist without wearing goggles or a protective mask.
- Never load the hopper higher than the loading sill.
- Never allow any material to remain outside the hopper during the packing procedure.
- Allow the slide and sweep panel control levers to release automatically.
- Do not try to put garbage in the hopper after the beginning of the packing cycle. The slide panel should be in starting position and stopped before loading the hopper.
- The tailgate latch should be securely tightened before loading begins.

Operator's Responsibility – Equipment with container handling system

- Never operate the packing system with the container off the ground.
- If waste needs to be collected from the container, use a long-handled shovel while the container is on the ground. Never position yourself between the container and the container handling system.
- Check around before lifting the container for dumping.
- Both latches must be locked over the container bar before raising the container.
- Lower the container with gentle movements. Never release the container on the ground.
- Do not bang the container against the tailgate or loading sill.
- Do not attempt to hoist or lift overloaded containers.
- Never pass underneath a raised container.
- Keep the container on a flat surface, at ground level.
- When not dumping containers, leave the steel cable of the winch or container handling system properly attached and secure.
- Attach the hook to its bracket and coil the excess steel cable when not in use.
- Never place the hook in the container docking location while the steel cable is loose.

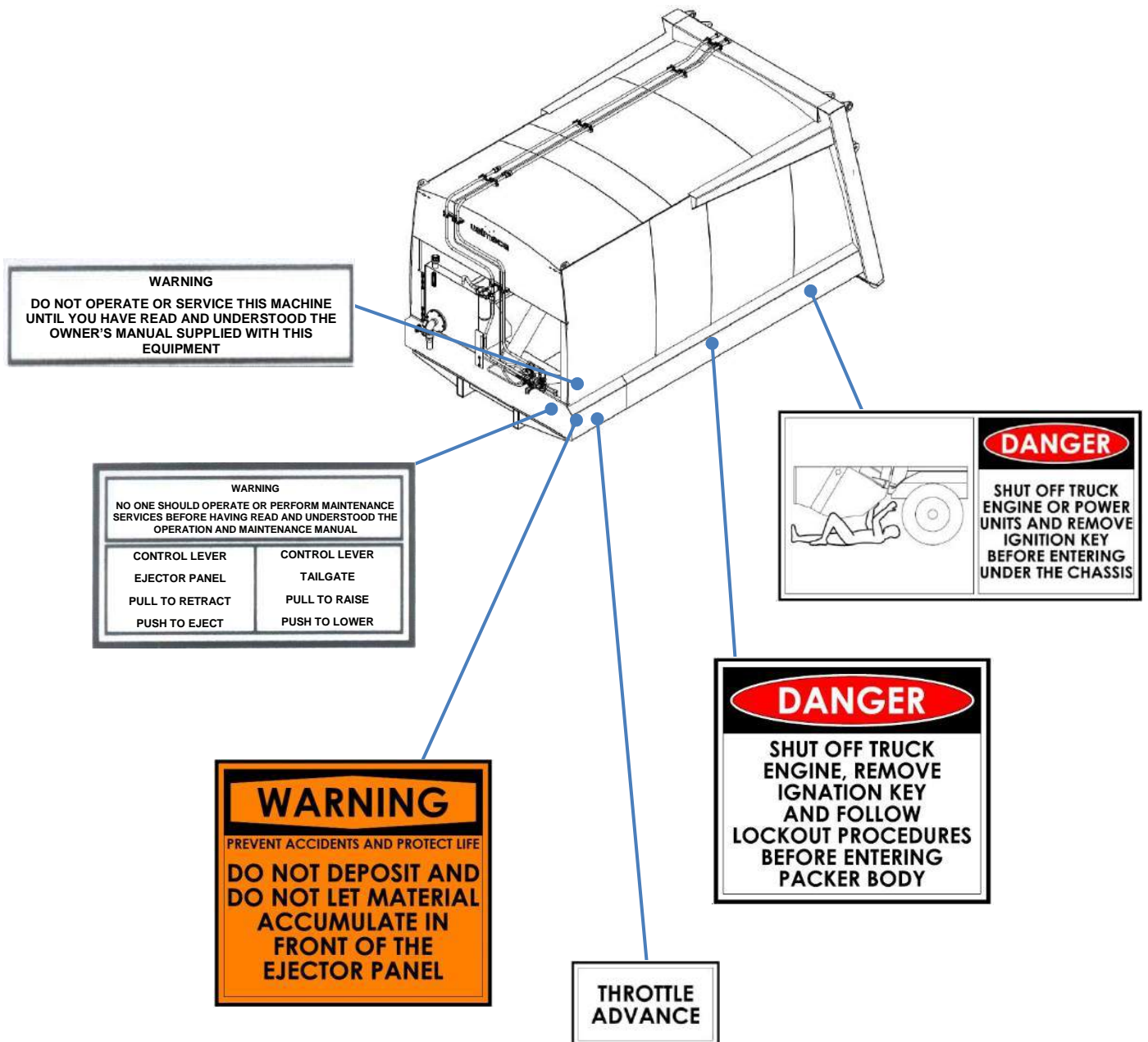
Operator's Instructions and Safety Decals

Make sure these signs are not covered and are always legible.



On both sides of the tailgate

On both sides of the tailgate



C. Warranty

usimeca - Indústria Mecânica S.A., for the certificate in question, provides a warranty against defects in materials, manufactured and assembled, according to the terms and conditions specified below.

Any and all complaints from the owner regarding failures, defects and omissions found in the equipment during the effective term of this warranty will be addressed upon submission of the respective Domestic Sales Invoice issued by the factory or by the representative, together with the Technical Delivery Report and the duly completed Service Reports, which are the only suitable documents to ensure service, to the exclusion of any others.

The warranty is valid only if the (warranty) services are properly performed by a Usimeca technical representative and the Technical Assistance reports are properly filled out and within the stipulated timeframes. In addition, the validity of the warranty is contingent upon the assembly and / or technical delivery having also been performed and / or supervised by a Usimeca technical representative and the respective reports duly filled out and signed by the customer.

Usimeca, as the manufacturer, warrants that each new equipment manufactured or supplied by Usimeca and delivered to the first buyer, including all factory installed options and accessories, is free from defects in material or workmanship under normal usage conditions, transferring all rights covered by this warranty in the event of the equipment being resold, to the subsequent owner(s), until the end of the term set forth under these terms, provided that written notice is given to Usimeca within 15 days after the assignment or transfer operation.

Usimeca's obligation is limited to repairing or replacing any parts that, within the normal warranty period to which these terms refer, are returned to Usimeca, directly to the factory or through a regional representative, and whose examination reveals, to the satisfaction of the manufacturer / supplier, the existence of the claimed defect. Replaced parts are the property of Usimeca.

Defective parts, according to this warranty, will be repaired or replaced by the representative or by the factory, without charge for the parts or labor employed, provided that this is done at its facilities.

The criterion for granting the Warranty, according to these Terms, is:

- **The Warranty is granted for the equipment as a whole for a period of six (6) months after Technical Delivery performed by the Usimeca technical representative.**
- **Usimeca warrants against eventual structural defects in its equipment for up to twelve (12) months, starting from the date of Technical Delivery.**

The rules governing the warranty offered for products manufactured by Usimeca are:

-
1. **TECHNICAL DELIVERY:** To ensure that you, the owner, get the maximum satisfaction from your new equipment, a Usimeca representative must perform the Technical Delivery, upon customer request, within 30 days of issuance of the Domestic Invoice or Bill of Lading, in the case of export, according to the Technical Delivery Report, recommended by Usimeca. Technical Delivery must be performed before the equipment starts operating.
 2. **OWNER'S IDENTIFICATION:** The Domestic Sales Invoice serves to introduce the owner to any Usimeca representative throughout the country, qualifying the owner to receive the services described in these rules. For customers abroad, the presentation of import documentation replaces the presentation of the Domestic Sales Invoice.
 3. **WARRANTY:** This is a responsibility of the factory for the main purpose of warranting its products against defects in material and labor (manufacture). Within the conditions stipulated in the *WARRANTY*, you, the owner, will obtain warranty service at any Usimeca representative.
 4. **SERVICE AT 90 AND 180 DAYS AFTER DELIVERY:** These services must be performed upon completing ninety (90) and one hundred and eighty (180) days after Technical Delivery, with a grace period of ten (10) days more or less. Labor is free for the owner as long as it is performed at the factory or at the representative, and the owner is responsible for expenses related to normal consumption items (See instructions under *Owner / Customer Responsibility*). If there is an agreement with the representative or with the factory for such services to be performed on the owner's premises, the owner will be responsible for all transportation, food and lodging expenses for the technician(s).

The Terms of this Warranty will not apply in the following cases:

1. Equipment that has been subjected to misuse, neglect, accidents, overloading, non-compliance with safety, operation and maintenance instructions provided by the factory in its Owner's Manual and defects caused by parts that have not been replaced in a timely manner.
2. Defects due to product alteration resulting from: design changes, changes in factory settings, tampering with seal(s), use of non-original factory parts or devices and services performed by workshops not belonging to the network of representatives or authorized technical assistance.
3. Rescue, transportation and transfer of employees, lodging, food, oils, grease, joints, filtering elements and cleaning materials will not be covered by the warranty and must be absorbed by the customer.
4. Normal maintenance services such as: washing, lubrication, oil and filter changes, hydraulic adjustments and releasing the sweep and slide panel levers when available, automatic throttle advance adjustment, adjustment of safety devices (anti- throttle advance and anti-backpacking), retightening of the packer body, pump, Power Take-Offs, clamps, tubes, hoses and connections in general.
5. The deterioration and normal wear and tear of paint due to exposure to weather and the use of chemicals in washing.
6. Lost profits.

-
7. The replacement of normal maintenance items such as oils, filters, bearings, rubber seals and shafts, when such replacement is performed in connection with normal maintenance services.
 8. The replacement of hydraulic components that have been affected by hydraulic oil contamination.

The owner will be responsible for:

- Proper maintenance of the equipment, which in addition to reducing operating costs will help to prevent problems due to misuse of the equipment, which are *not* covered by Warranty. Therefore, for your protection, the owner should always seek a representative or the Usimeca factory for the periodic services 90 and 180 days after Delivery, because the Warranty will only be valid upon proving that past services are duly noted or through submission of the Technical Assistance Reports for the services performed by the Usimeca representative.
- In order to be entitled to Usimeca's Warranty for your product, the owner must strictly observe the instructions contained herein, as well as those in the Owner's Manual, regarding maintenance and operation of the equipment.
- Observe the dates and request Usimeca Technical Assistance to schedule both Technical Delivery and Periodic Service at 90 and 180 days.

Services covered by warranty:

For the activities performed under warranty or in the periodic services 90 and 180 days after Technical Delivery, as long as the execution thereof occurs within the period of time stipulated in this Warranty, labor will be totally free of charge, ***with the owner only accountable for expenses arising from and referring to consumption items that may be supplied and applied.***

Parts not covered by warranty:

As they constitute normal consumable items, none of the parts below will be covered by the Warranty, regardless of the time elapsed. They are:

- Lights, headlights and electrical material in general.
- Oils and grease.
- Filters in general.
- Joints.
- Gaskets and "O" rings in general.
- Retainers.
- Reeving cylinder or winch steel cable.

Parts that suffer natural wear:

Some parts suffer natural wear that may be more or less pronounced according to the use of the equipment. Considering a normal use of **two daily eight-hour shifts** and preventive and / or corrective maintenance according to Usimeca's instructions, the parts listed below will have warranty coverage for 180 days. This warranty will only be valid after technical analysis by Usimeca or the supplier / manufacturer of the component and / or part.

-
- Cylinder articulation shafts and bushings.
 - Bearings in general.
 - Panel sliding parts or plates subject to wear.
 - Tailgate rubber seal.
 - Hydraulic pump.
 - Hydraulic and pneumatic cylinders.
 - Hoses.
 - Power Take-Off.
 - Cardan shaft.



Note:

*During the analysis period of the part presenting a problem, Usimeca or its representative may supply another part, which **will be charged to the customer**. If the warranty is granted, a credit will be opened for the value of the supplied part.*

This Warranty is in lieu of all other express or implied warranties, including any implied warranties regarding merchantability or fitness for a particular purpose, and any other manufacturer obligations or liability. No other person, Company or Corporation may provide any warranty other than the one mentioned herein.

Usimeca reserves the right to modify the specifications or make improvements to the equipment at any time or period, without incurring the obligation to do the same on previously sold equipment.



Danger!

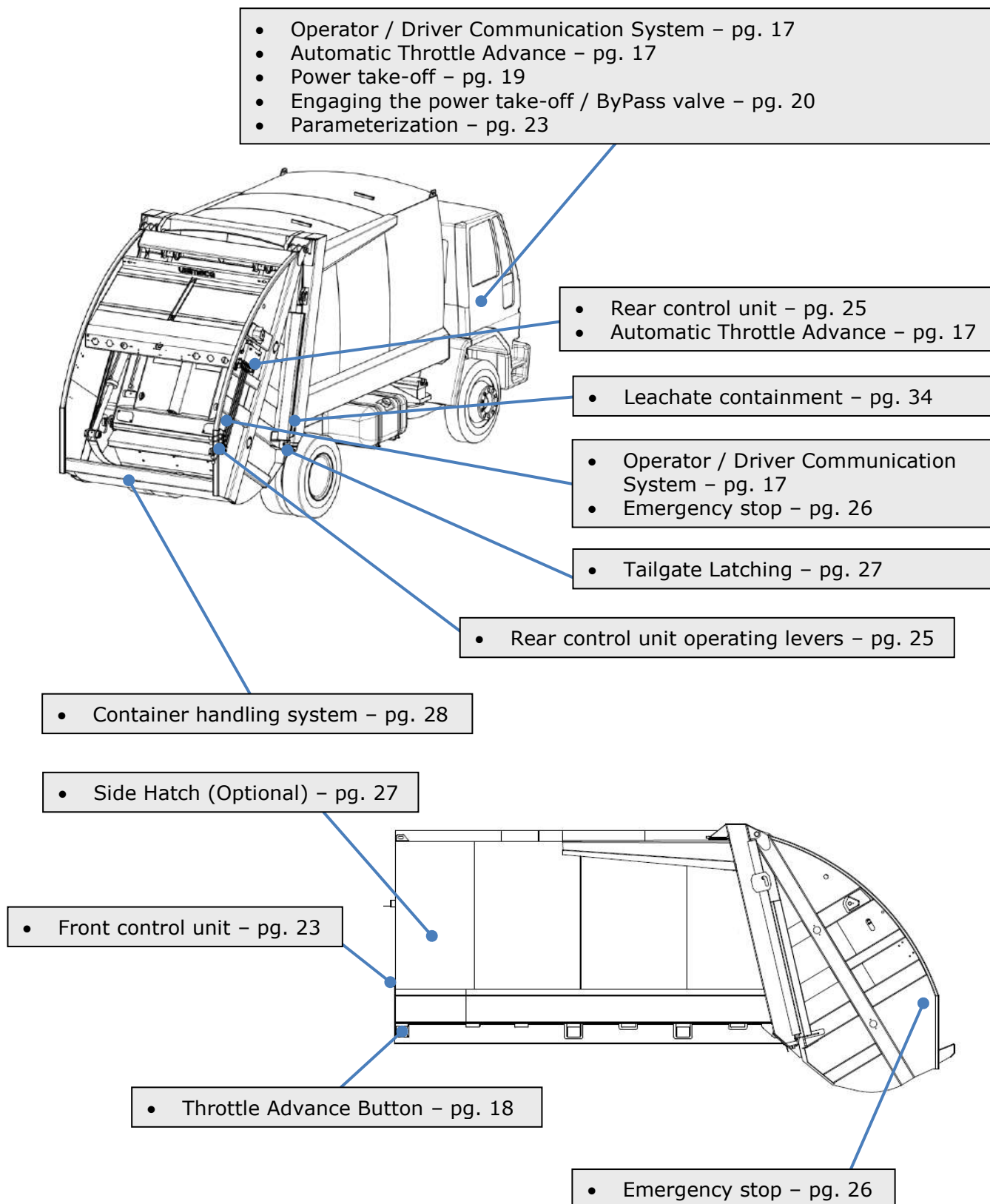


Attention!

Read the instructions described in the Owner's Manual and attend the operational training for the equipment and optional items before trying to operate the rear loader.

D. Operation

1. Overview



Operator / Driver Communication System



Communication System - Pushbutton / Light Signal



Cab buzzer

The operator / driver communication system, located at the rear of the vehicle on the curbside, consists of:

- An push button, which triggers an electronic buzzer installed on the vehicle's cab panel. When the operator presses the button, an audible signal warns the driver that the loading operation is complete and the vehicle is in condition to move forward.
- A warning light, which lights up when the power take-off / ByPass valve is on.

Automatic Throttle Advance

Automatic throttle advance automatically increase the RPMs of the engine, enabling proper rotation of the hydraulic pump for operation of the various cylinders existing in the equipment.

The automatic throttle advance of the vehicle engine is enabled when power take-off is engaged or via a switch, located on the chassis cab panel.

- *In vehicles with conventional engine (injection pump)*, throttle advance is performed through a pneumatic cylinder, driven by a solenoid valve.



Pneumatic Cylinder

- *In vehicles with electronic engine*, the signal is sent directly to the vehicle's

electronic module, without a pneumatic cylinder.

The limit switch, located next to the rear control unit, automatically engage the throttle advance during the tailgate packing cycle.



Limit switch

Throttle Advance Button

The throttle advance button is located on the left side of the body near the front control unit. The button allows the operator to increase the RPMs of the engine for raising the tailgate and during waste unloading.



Throttle Advance Button



Attention!

As a safety measure, automatic throttle advance must be switched off before starting the vehicle.

Power Take-Off



Attention!

The power take-off may be provided by Usimeca, by the chassis manufacturer or even by a third party, hired by the customer.

We recommend that, for proper operation and maintenance of the Power Take-Off, the guidelines contained in the manufacturer's manual for the power take-off mounted on the equipment be followed.

The information contained in this manual has been obtained through our field experience over the years.

If there is any discrepancy between our manual and the power take-off manual, always consider the recommendations of the power take-off manufacturer so that there is no loss of warranty.

Always refer to the catalogues, literature and owner's manuals from the power take-off manufacturer.

A power take-off is necessary to run the hydraulic pump. The two main types used in the assembly with a rear loader are: Auxiliary power take-off coupled to the transmission and Rear-Mounted Power Take-Off (REPTO) driven by the flywheel.

Auxiliary power take-off coupled to the transmission: the auxiliary power take-off can only be turned on and off with the vehicle stopped.

For vehicles with manual transmission, moving the vehicle with the power take-off on is not recommended. This procedure combined with gear shifts could damage the transmission. However, for vehicles with automatic transmission, it is possible to have "pack-on-the-go hydraulics".



Power take-off with manual transmission



Power take-off with automatic transmission

Rear-mounted power take-off, driven by the flywheel (REPTO): this model of power take-off will always be turning when the engine is running.



Rear-mounted Power Take-Off (REPTO)

When the hydraulic pump is directly coupled to the REPTO, a ByPass valve must be mounted. The ByPass valve allows the oil to be returned to the oil reservoir, preventing it from operating pressurized during vehicle traffic. Without this ByPass system, the hydraulic oil would overheat, damaging the hydraulic components and the hydraulic oil itself.

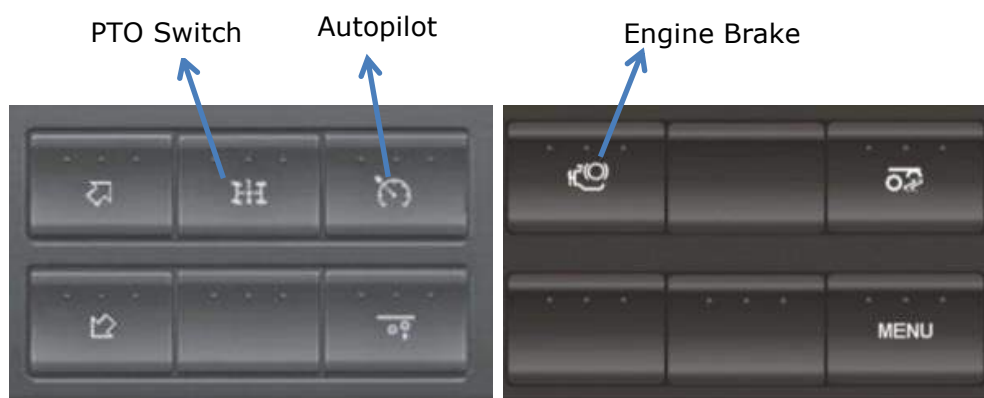
The ByPass valve can be coupled to the pump or mounted in line, below the front control unit.



ByPass valve

Engaging the Power Take-Off (PTO) or REPTO's ByPass valve

The exactly PTO Switch location will vary depending on the chassis manufacturer / model.



Example: VOLKSWAGEN Panel Switches

Procedure for engaging the Power Take-Off (PTO) coupled to the manual transmission

To engage the power take-off,

- The vehicle should have the engine on at idle speed.
 - The vehicle must be stopped.
1. Start the engine and press the accelerator pedal until the brake air pressure indicator reaches 8 bar.
 2. Press the clutch pedal.
 3. Position the gear shift lever to neutral (idle) position and wait five seconds for the pilot shaft to stop rotating completely.
 4. Press "Auto Pilot" button.
 5. Turn on the power take-off.
 6. Release the clutch to establish hydraulic pump operation.



Notes:

For vehicles with manual transmission, it is not possible to have "pack-on-the-go hydraulics", so the accelerator pedal is disabled when the power take-off is engaged.

To disengage the power take-off,

- The vehicle should have the engine on at idle speed.
 - The vehicle must be stopped.
1. Press the clutch pedal and wait for five seconds.
 2. Press "Auto Pilot" button.
 3. Press the power take-off switch to disengage it.
 4. Release the clutch pedal.



Attention!

Always turn off the Power Take-Off and automatic throttle advance before moving the truck.

Avoid traveling with the Power Take-Off on; even for traveling short distances, turn it off.

The instruction for operating the power take-off may vary according to its manufacturer. Read and follow the recommendations in the power take-off manual that accompanies the vehicle.

Procedure for turning on the Power Take-Off in vehicles with Automatic transmission

To engage the power take-off,

- The vehicle should have the engine on at idle speed.
1. Start the engine and press the acceleration pedal until the brake air pressure indicator reaches 8 bar.
 2. Place the gear shift in neutral position (idle).
 3. Press "Auto Pilot" button.
 4. Press the power take-off control to establish hydraulic pump operation.

**Notes:**

Some power take-offs can be operated with the "pack-on-the-go hydraulics". In addition to this manual, refer to the instructions in the manuals from the manufacturers of the transmission and power take-off. Check whether the vehicle was properly configured for this type of operation.

If the vehicle is configured to "pack-on-the-go hydraulics", when the power take-off switch is pressed, the accelerator pedal is limited to the pre-programmed RPM of the engine.

To disengage the power take-off,

- The vehicle should have the engine on at idle speed.
 - The vehicle must be stopped.
1. Press "Auto Pilot" button.
 2. Turn off the "PTO" switch.

**Attention!**

Turn off the power take-off when the rear loader is not operating.

Always turn off the Power Take-Off and automatic throttle advance before moving the truck.

Avoid traveling with the Power Take-Off on; even for traveling short distances, turn it off.

Read and follow the power take-off and transmission manufacturer instructions on operating procedures.

Procedure for turning on the REPTO ByPass valve:

To turn on the REPTO ByPass valve, follow the procedure below:

1. Turn on chassis.
2. Position the gear shift lever to neutral (idle) position and engage the parking brake.
3. Disable engine brake.
4. Press "Auto Pilot" button.
5. Press the "PTO / ByPass" switch to turn it on.

**Notes:**

After completing these steps, the automatic throttle advance will be in working order.

The power take-off is automatically disabled if the parking brake is not engaged, the engine brake is enabled, the driver steps on the brake pedal and / or engages any gear in the transmission.

To disengage the power take-off,

1. Press "Auto Pilot" button.
2. Press "PTO / ByPass" operating switch to turn it off.

Parameterization

The chassis with electronic management module allows for direct action on the engine's operating parameters. It is thus possible to prepare the vehicle for the rear loader application:

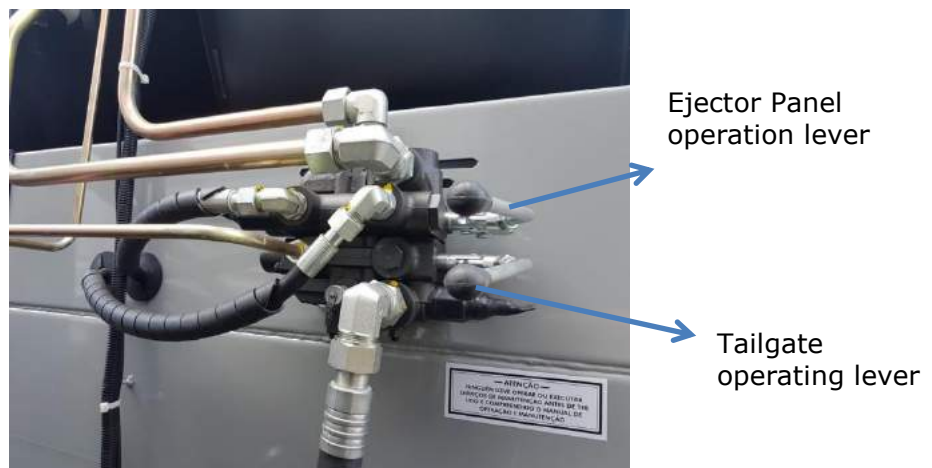
- When the power take-off / ByPass valve switch is pressed, the accelerator pedal is either disabled (stationary vehicle operation) or limited to the pre-programmed speed (pack-on-th-go operation). This prevents undue engine acceleration during packing, ensuring lower fuel consumption, lower noise and longer hydraulic system service life.
- The RPMs of the engine remains idle until a signal is generated (by the limit switch located on the rear control levers, or by the throttle advance pushbutton) to increase the RPMs of the engine up to the pre-programmed working RPM and remain there while the signal continues. Once the signal is removed, the RPMs of the engine returns to idle. This parameter allows for proper automatic throttle advance of the engine during the rear loader's packing cycle.

This parameterization can only be performed with appropriate equipment used by the chassis manufacturer's Dealer Network.

Front Control Unit

The front control unit consists of a directional hydraulic control valve with two levers.

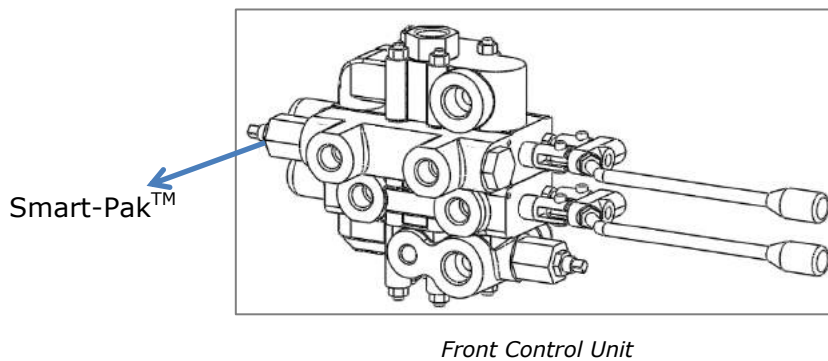
The lower lever controls the tailgate opening / closing. By pulling the lever, the tailgate will open; by pushing it, the tailgate will close.



Front Control Unit

The upper lever controls the telescopic cylinder secured to the ejector panel. By pulling the lever, the panel will move toward the tailgate, in the proper movement for ejecting the garbage stored inside the body. By pushing the lever, the cylinder will move the ejector panel in the opposite direction, retracting the ejector panel.

The front control unit is equipped with the Smart-Pak™ cartridge that provides homogeneous counter packing, in addition to acting as an "anti-backpacking" device.



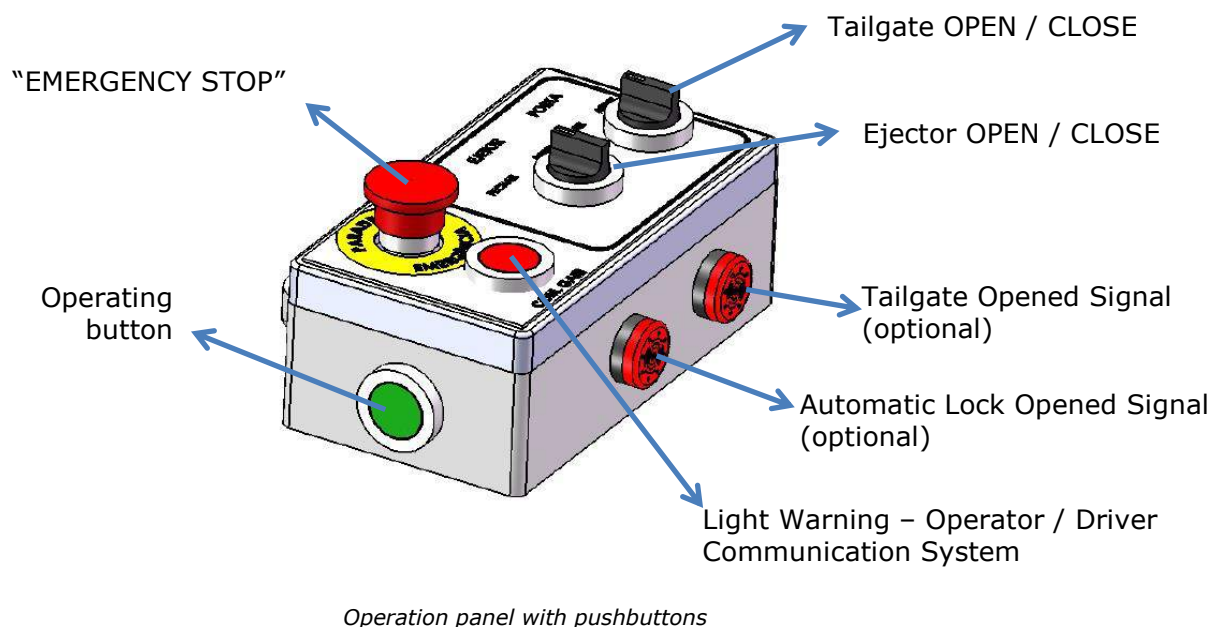
! Danger! ⚠ Attention!

Never engage the automatic throttle advance system when the ejector panel is retracting or when the tailgate is closing.

Electric Front Control Unit

The rear loader may be provided with an electric front control unit and an operating panel with pushbuttons.

The operating panel is located within the vehicle's cab, near the driver.



To open / close the tailgate or move the ejector panel forward / backward, turn the respective selector key while holding down the "Operating button".

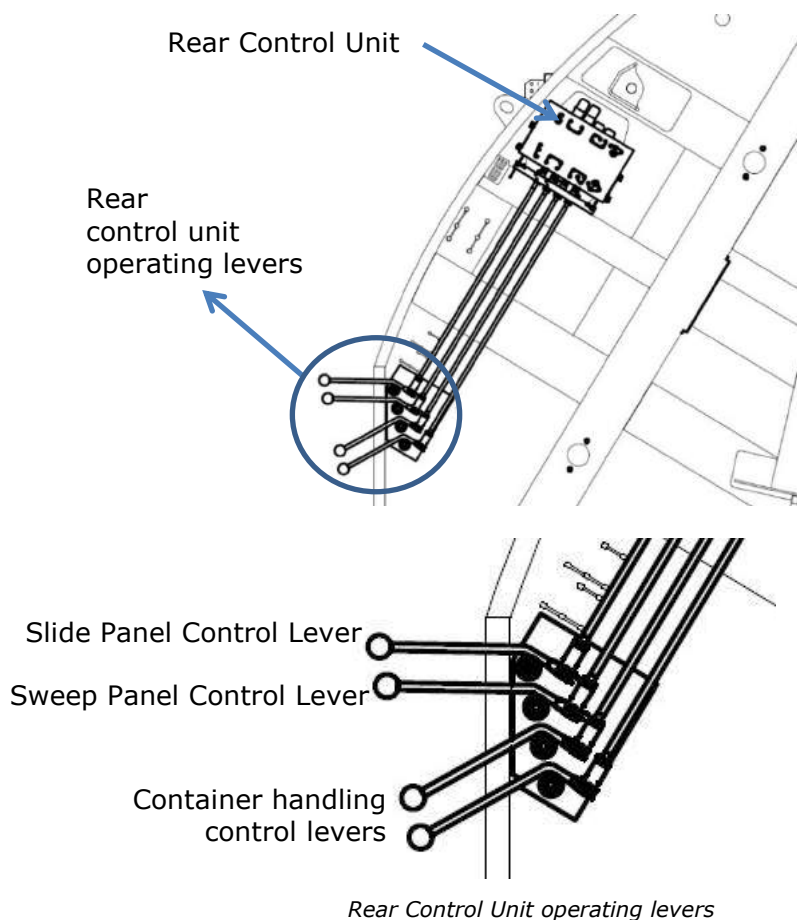
Simultaneous actuation of the selector key and the "Operating button" is a way of preventing improper tailgate opening and ejector panel movement.

LED lights are optional items, which indicate tailgate and / or automatic lock opened.

Rear Control Unit

The rear control unit consists of a directional hydraulic control valve with 2 or more levers, located on the right side of the tailgate, with the following functions:

- Slide panel operating lever: used to operate the slide panel during the packing cycle.
- Sweep panel operating lever: used to operate the sweep panel, opening and closing it during the packing cycle.
- Container handling control levers (tipper bar, winch, reeving cylinder, cart lifter): They are provided when container handling attachments are added to unit. They are used to raise and lower the container, dumping the waste into the hopper.



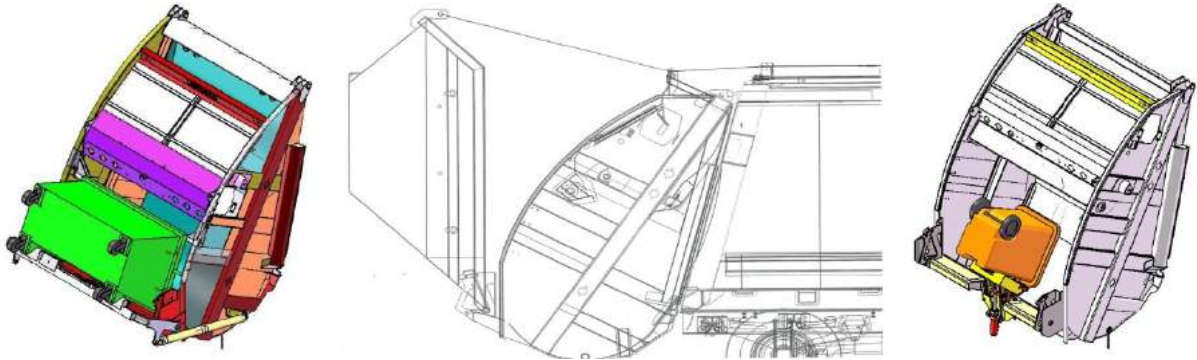
Notes:

The rear loader may be equipped with 2, 3 or 4 levers on the rear control unit, depending on the unit's configuration:

- *STD rear loader, without container handling system: 2 levers.*
- *Rear loader with triple rear control unit (1 container handling system): 3 levers.*
- *Rear loader with quadruple rear control unit (2 container handling system): 4 levers.*

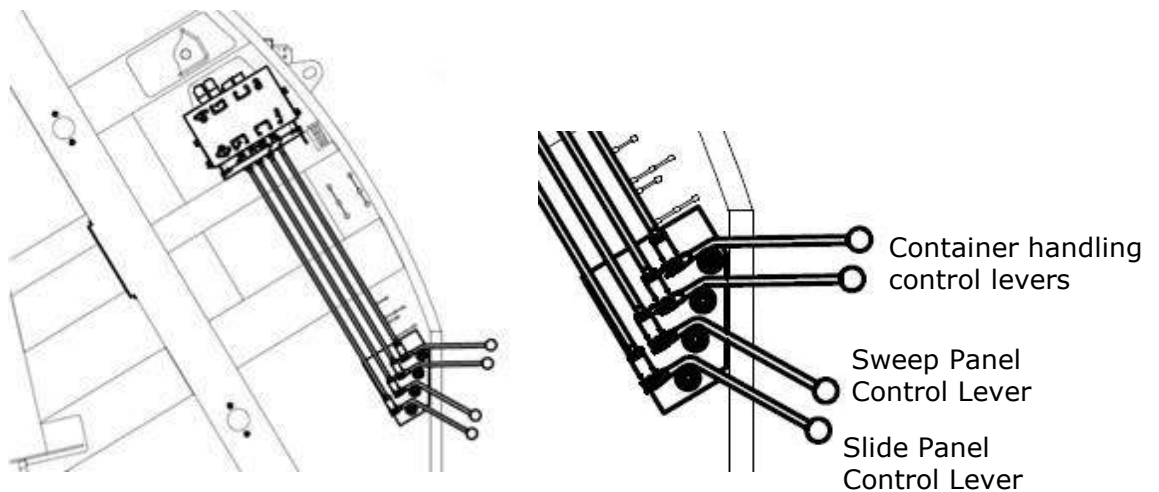
The automatic throttle advance system of the RPMs engine is triggered automatically when any of the packing system levers is engaged.

There is no automatic throttle advance in when operating the container handling system.



Container handling system – Tipper bar, reeving cylinder and cart lifter

For right-hand drive chassis, the control levers are located on the left side of the tailgate.



Control Levers for right-hand drive chassis

Emergency Stop

The rear loader has an emergency stop button on both sides of the tailgate. The emergency stop can be used for any unforeseen event during the packing cycle.

When the emergency stop is triggered, the power take-off is switched off and the movement of the packing panels is immediately interrupted.



Side Hatch (Optional)

The equipment may be provided with a side hatch on the left side of the body to allow inspection and maintenance activities.



Danger!

Serious personal injury or death can occur!

Never enter the body, unless the pressure in the telescopic ejection system cylinder is released, PTO disengaged and ignition key removed and placed in your pocket.

Tailgate Latching

a. Tailgate Latching

The latches are located on both sides of the rear loader. They are used to keep the tailgate locked and secured to the body during operation, and are manually loosened and turned outward, allowing the tailgate to be opened.



Tailgate Latching



Tailgate locked

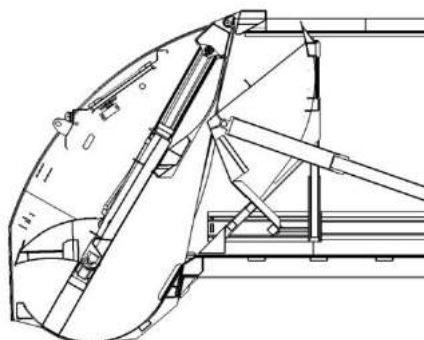


Tailgate unlocked



Attention!

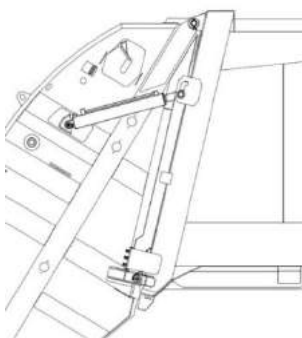
Before attempting to loosen the latches, the pressure against the tailgate must be relieved by opening and moving the packing panels to the "automatic stop" position in the packing cycle.



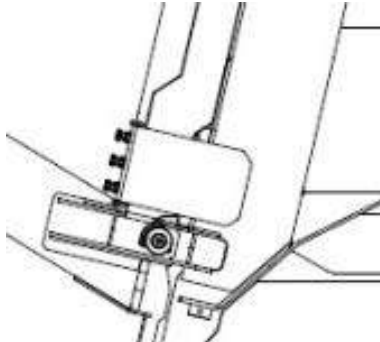
"Automatic stop" position

b. Automatic Tailgate Latching

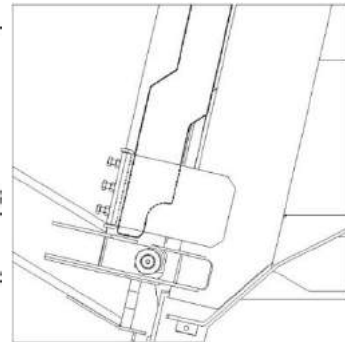
The rear loader may be equipped with an automatic tailgate latches. The latches are automatically unlatched and latched during the tailgate opening and closing operation. In this case, the tightness of the latches must be visually checked.



Automatic Tailgate Latching



Tailgate locked



Tailgate unlocked

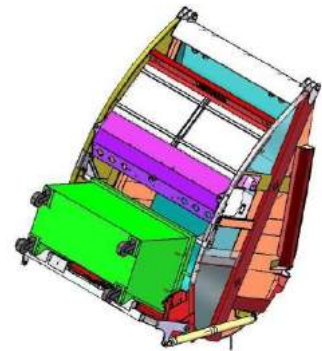
Container Handling System

a. Tipper Bar

The tipper bar was developed to be installed at the rear loader loading dock.

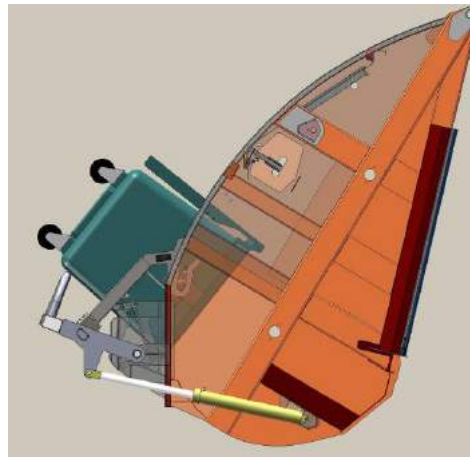
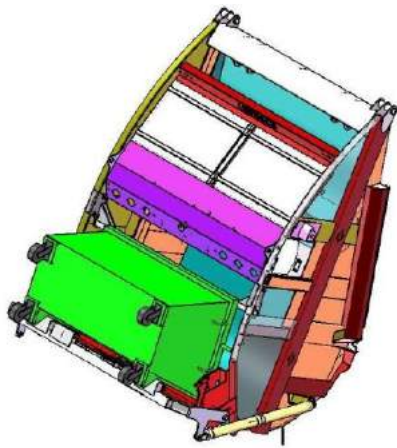
Depending on the type of tipper bar, **the following container models that follow the ABNT or European Standards** can be unloaded in each cycle:

- DI – Tipper bar to lift, dump and lower a Metal Refuse Container: 1 metal refuse container with 4 wheels measuring 0.8 m³, 1.2 m³ or 1.6 m³ **as per ABNT NBR 13334 standard.**



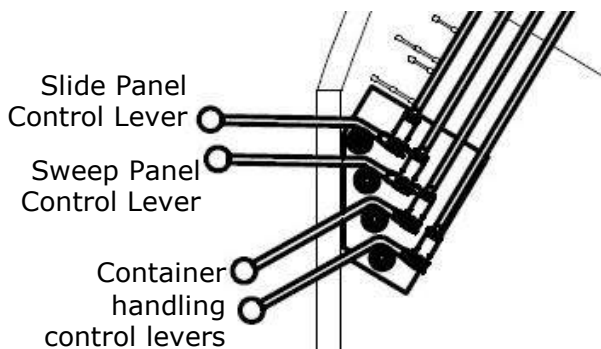
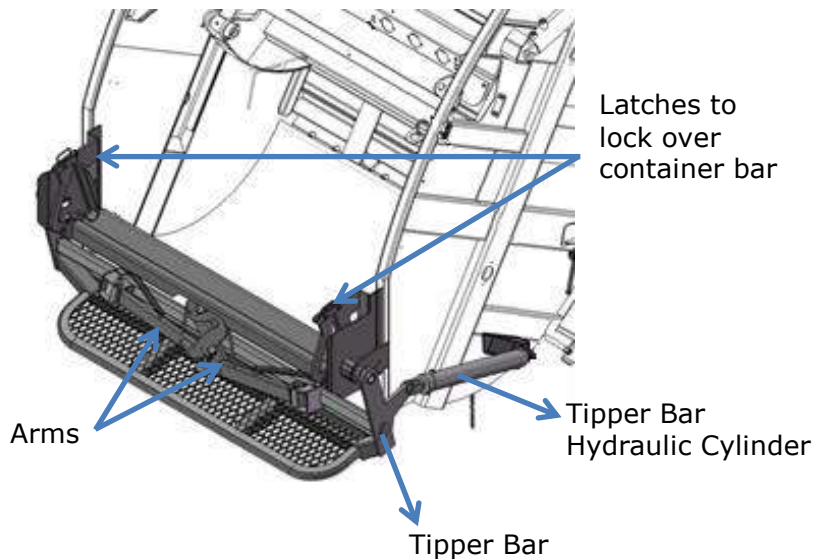
- DIMP – Tipper bar with arms to lift, dump and lower Metal or Plastic Refuse Container: 1 metal refuse container with 4 wheels measuring 0.8 m³, 1.2 m³ or 1.6 m³ **as per ABNT NBR 13334 standard** or 1 plastic refuse container with 4 wheels and 550 to 1000 liter capacity (**flat lid, ABNT NBR 15911-3 standard or European standard EN 840-2, with side trunnions**).



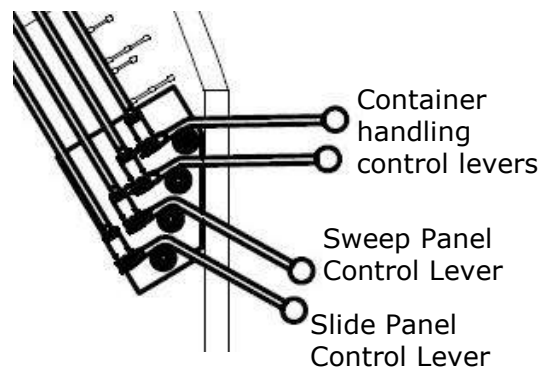


The tipper bar assembly is formed by:

- Two dual-action hydraulic cylinders, arranged on the lower sides of the tailgate.
- A tipper bar installed at the bottom of the tailgate, which tilts the container.
- Two latches to lock over container bar before raising container.
- Operating lever, used to raise and lower the container, dumping the waste into the hopper.
- The spool of the control valve is spring-centered; by releasing the lever, it returns to neutral position; This neutral position of the valve blocks feeding of the cylinders and the container is consequently retained at any point of the route, when this circumstance is established.



Left-Hand Drive Chassis



Right-Hand Drive Chassis



Warning!

Follow all instructions to operate the tipper bar safely.

- *Make sure the refuse container is properly secured to the latches before you raise or lower the container.*
- *Never use the equipment to transport containers.*
- *Do not move the vehicle with a container docked on the equipment.*
- *Keep the vehicle braked before docking or lifting the container.*
- *Never operate the packing system with the container off the ground.*
- *If waste needs to be collected from the container, use a long-handled shovel while the container is on the ground. Never position yourself between the container and the device.*
- *Check around before lifting the container for dumping.*
- *Lower the container with gentle movements. Never release the container on the ground.*
- *Do not bang the container against the tailgate or loading sill.*
- *Do not attempt to hoist or lift overloaded containers.*
- *Never pass underneath a raised container.*
- *Keep the container on a flat surface, at ground level.*



Attention!

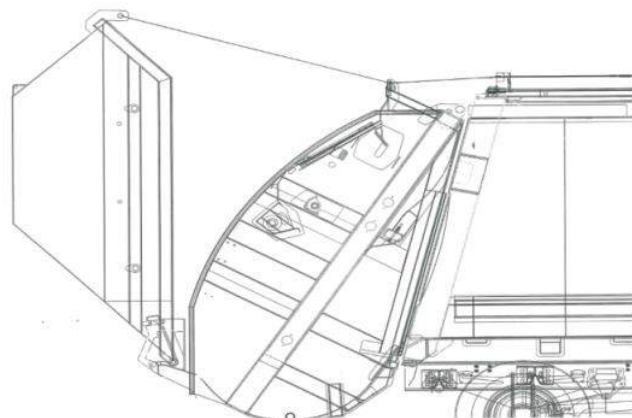
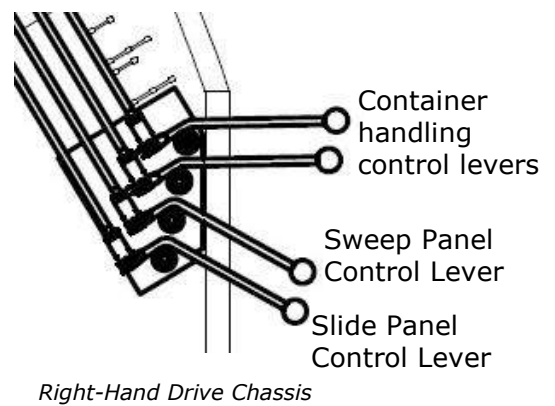
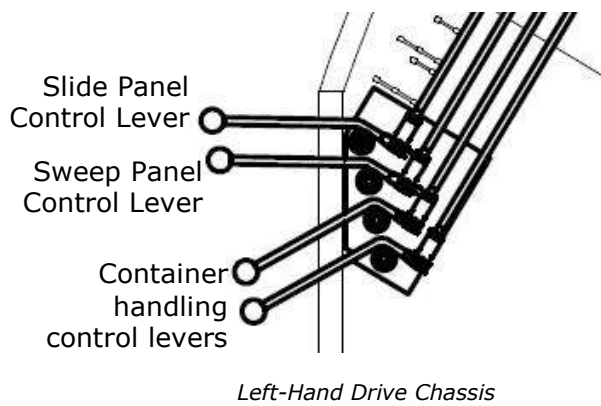
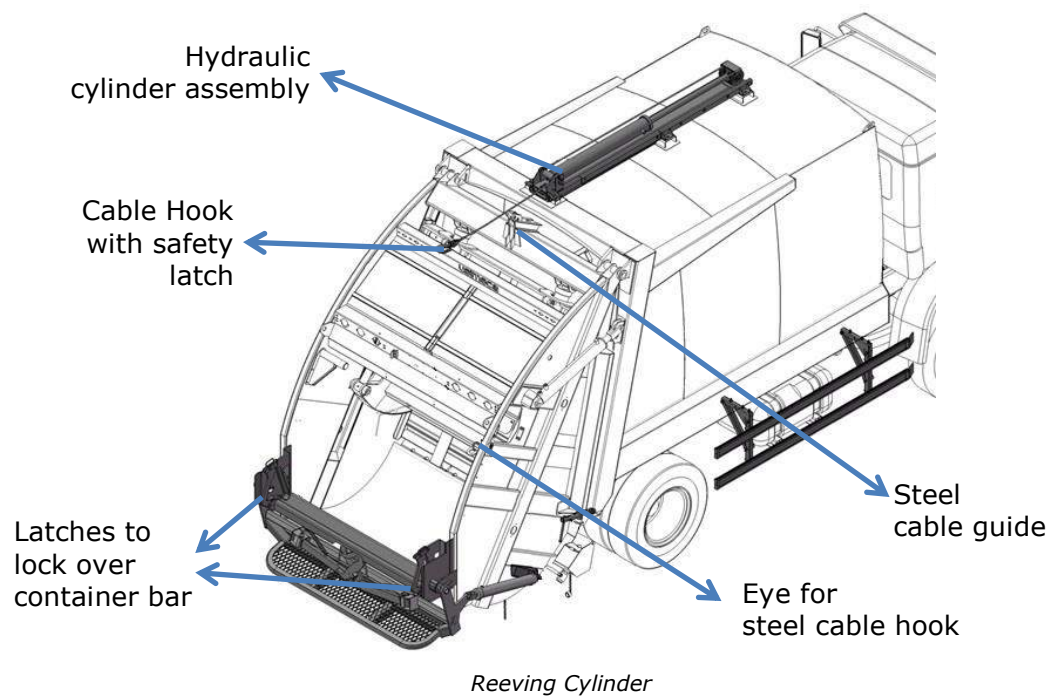
Never use the lower device to help dump a 4.0 to 5.0 m³ container (operation with reeving cylinder or winch only).

Reeving Cylinder

The reeving cylinder allows for dumping metal refuse containers from 4.0 to 5.0 m³ capacity (**ANSI Z245.60 standard**) on the loading dock. Based on loose and moist residential refuse, the expected maximum load (container + garbage) is 1,600 kg for the 4.0-m³ container and 2,200 kg for the 5.0-m³ container.

The complete assembly of this device is formed by:

- A double-acting hydraulic cylinder, located on the body roof. By means of a set of pulleys, it provides the steel cable with the necessary stroke to raise and dump the container.
- A guide for the steel cable, installed at the top of the tailgate.
- Two latches to lock over container bar before raising container.
- A cable hook with safety latch at the end of the steel cable, to connect to the container's traction bracket.
- Operating lever, used to raise and lower the container, dumping the waste into the hopper.
- The spool of the control valve is spring-centered; by releasing the lever, it returns to neutral position; This neutral position of the valve blocks feeding of the cylinders and the container is consequently retained at any point of the route, when this circumstance is established.



Warning!

Risk to life, load raised!

The set of pulleys fixed on the rod of the linear hydraulic cylinder is guided on sliding rails; risk to physical integrity or of crushing limbs.



Sliding assembly

Follow all instructions to operate the container safely.

- *Make sure the refuse container is properly secured to the latches before you raise or lower the container.*
- *Never use the equipment to transport containers.*
- *Do not move the vehicle with a container docked on the equipment.*
- *Keep the vehicle braked before docking or lifting the container.*
- *Never operate the packing system with the container off the ground.*
- *If waste needs to be collected from the container, use a long-handled shovel while the container is on the ground. Never position yourself between the container and the device.*
- *Check around before lifting the container for dumping.*
- *Lower the container with gentle movements. Never release the container on the ground.*
- *Do not bang the container against the tailgate or loading sill.*
- *Do not attempt to hoist or lift overloaded containers.*
- *Never pass underneath a raised container.*
- *Keep the container on a flat surface, at ground level.*
- *Do not move the vehicle with the steel cable loose.*
- *When not dumping containers, leave the steel cable properly attached to the eye on the tailgate.*
- *Attach the hook to its eye and coil the excess steel cable when not in use.*
- *Never connect the hook to the container while the steel cable is loose.*
- *Dumping containers loaded with construction debris or similar items is not recommended.*

Attention!

Never use the tipper bar to help dump a 4.0 to 5.0 m³ container (operation with reeving cylinder or winch only).

Never use the steel cable to pull the container that is out of the proper position for docking. The vehicle should be maneuvered and positioned.

Never use the steel cable of the reeving cylinder for towing or pulling other vehicles or objects.

b. Cart Lifter for 2-wheel plastic container

The cart lifter was designed to be attached to the tailgate.

It allows for unloading, in each cycle, 1 plastic container with 2 wheels and capacity of 240 or 360 liters, European standard DIN (EN 840-1) or U.S. standard ANSI Z245-60.

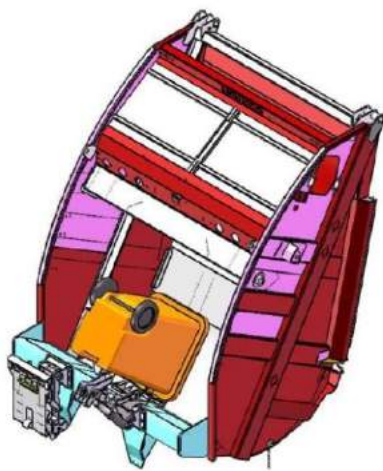
The cart lifter was designed to lift containers with a maximum total weight of 160 kg and operates with pressure compatible with the rear loader.



European
standard container

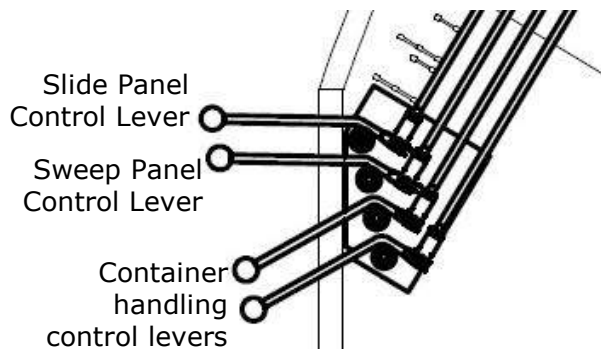
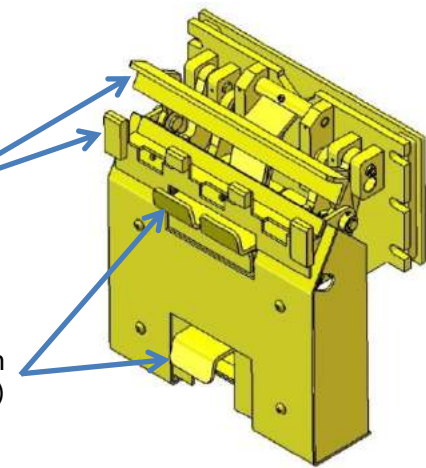


U.S.
standard container

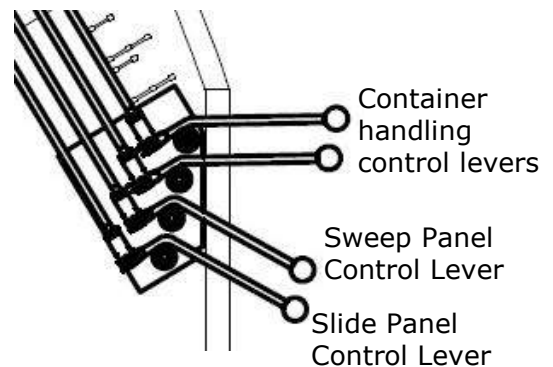


Cart lifter's
latch
(European
standard)

Cart lifter's latch
(U.S. standard)



Left-Hand Drive Chassis



Right-Hand Drive Chassis



Notes:

Operating the cart lifter: the cart lifter can be operated by the rear control unit or, alternatively, according to the Usimeca design, it can be operated by a third hydraulic control unit, exclusively for operating the cart lifter(s).



Warning!

Follow all instructions to operate the container safely.

- Never lift the plastic container without first checking whether it is perfectly secured by the cart lifter's latch.

- *Do not dump the plastic container if it is damaged.*
- *Never use the equipment to transport containers.*
- *Do not move the vehicle with a container docked on the equipment.*
- *Keep the vehicle braked before docking or lifting the container.*
- *Never operate the packing system with the container off the ground.*
- *If waste needs to be collected from the container, use a long-handled shovel while the container is on the ground. Never position yourself between the container and the device.*
- *Check around before lifting the container for dumping.*
- *Lower the container with gentle movements. Never release the container on the ground.*
- *Do not bang the container against the tailgate or loading sill.*
- *Do not attempt to hoist or lift overloaded containers.*
- *Never pass underneath a raised container.*
- *Keep the container on a flat surface, at ground level.*

Leachate containment

a. Tailgate Sealing System

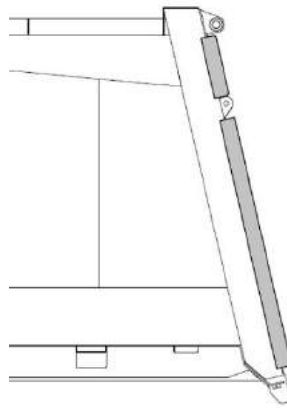
In the whole lower part and in 2/3 of the vertical part of contact with the body, the tailgate has a very strong, properly profiled rubber seal, which keeps the leachate coming from garbage packing from leaking.



The tailgate latches, used to keep the tailgate latched, attached to the body during operation, must be firmly locked to achieve the required seal.

If the rubber is damaged or the tailgate is not properly latched, leachate may splash out of the rear loader during packing.

Deflector plates installed on the body guide the leachate to the sump tank and prevent it from reaching passersby.



Deflector plates

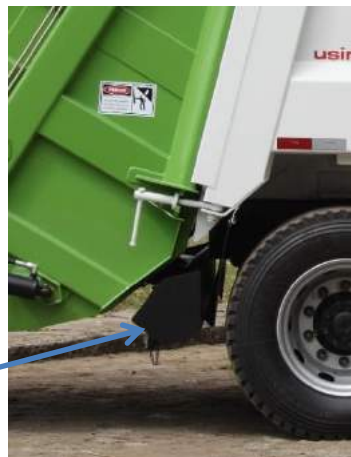
b. Leachate sump tank

Every rear loader manufactured by Usimeca is supplied with a sump tank, located at the bottom of the implement, between the body and the tailgate.

The sump tank has the function of collecting leachate in the case of an eventual rubber seal failure.

The standard sump tank has a capacity of 100 liters, and should be emptied and cleaned periodically to prevent the accumulation of waste inside.

Leachate
Sump Tank



The sump tank has a constructive shape that allows leachate to enter, but prevents it from falling when the vehicle is in motion.

In more extreme operating conditions (wet waste and organics), with significant leachate generation, there is the alternative of installing a sump tank at the bottom of the body.

Leachate
Sump Tank



Leachate sump tank

2. Loading and Packing Procedure

Start of Operation procedures: Before leaving the garage

Turn on the vehicle's engine and the power take-off, to warm-up the oil.

Retract all cylinders, slide, sweep, telescopic and, if equipped, the container handling system cylinders. Check the hydraulic oil level and complete if necessary.

Check the tightness of tailgate latches.

Attention!

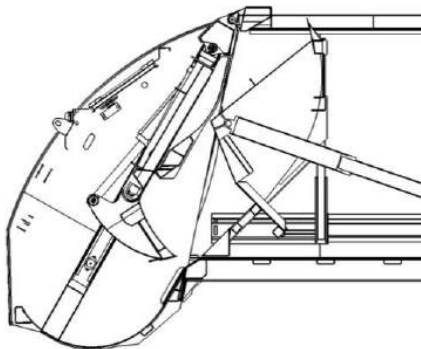
Traveling with the vehicle with the latches not properly tightened can:

- *Damage the threads of the manual latches.*
- *Cause cracks in the upper part of the body posts.*
- *Damage the weld at the junction of the bottom and side plates of the hopper.*
- *Damage the rubber seal and cause leachate to leak.*

Traveling long distances with the telescopic cylinder extended damages the seals as well as the stages (sleeves).

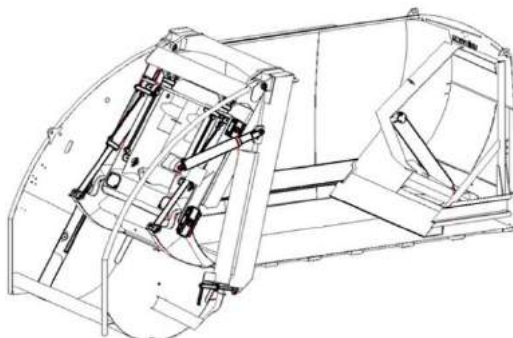
Start of Operation procedures: When reaching the collection route

Extend the ejector panel to the end of the body.



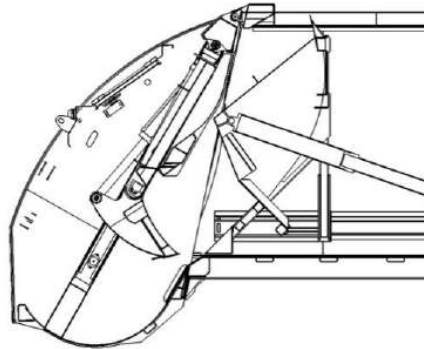
Starting position of the ejector panel – residential waste collection

In the case of hospital waste collection, the telescopic cylinder should not be extended. Even at the beginning of the operation, the ejector panel should be retracted.



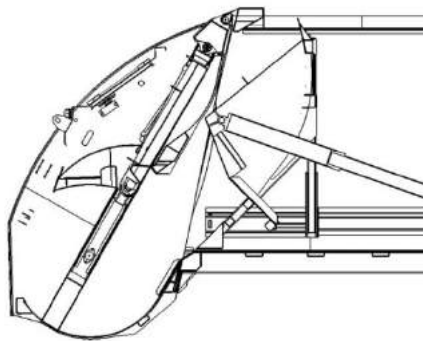
Starting position of the ejector panel – hospital waste collection

With the slide and sweep panels in starting position, the operator dumps the garbage into the hopper.

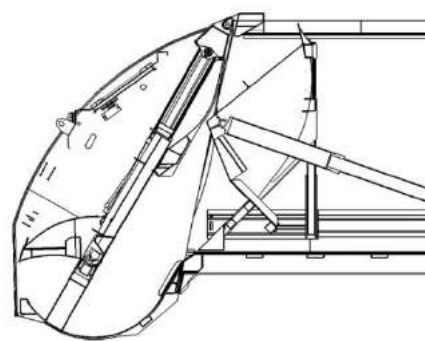


Starting Position

When the operator starts the packing cycle, the sweep panel opens and the sweep and slide panels move backward over the load.

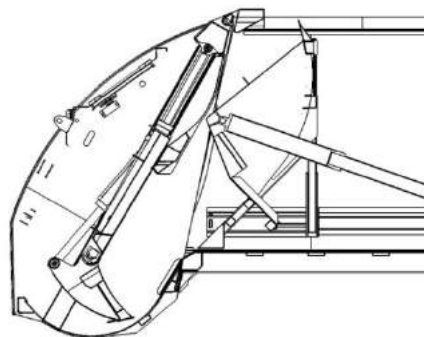


PHASE 1: Sweep panel opens

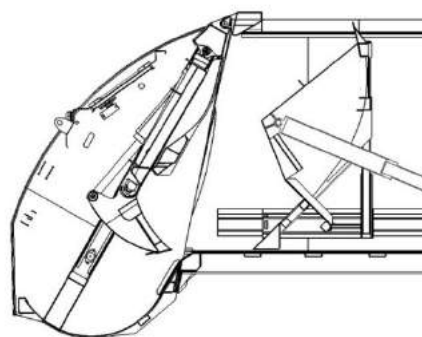


PHASE 2: Slide panel lowers

The packer panel, during loading, compacts debris against the ejector panel which, in turn, retracts forward when the packing index is reached.



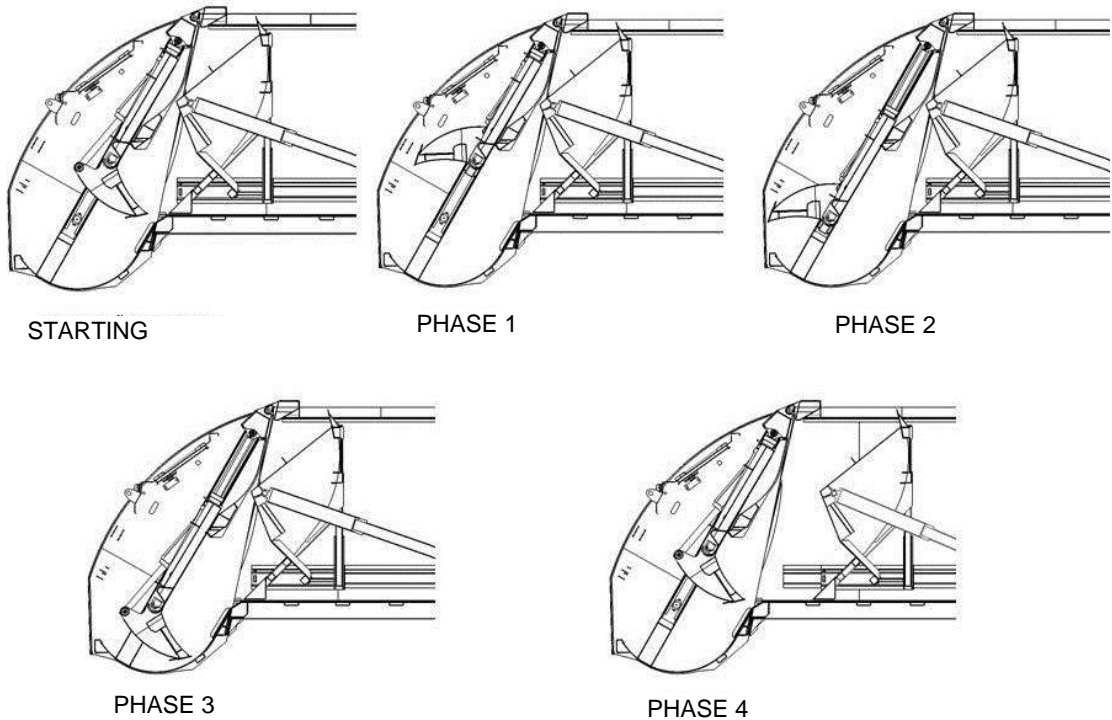
PHASE 3: Sweep panel scrapes the hopper



PHASE 4: Slide panel raises and ejector panel retracts in proportion to packing

The combined pressure acting between the sweep and ejector panels establishes uniform packing and a complete body loading.

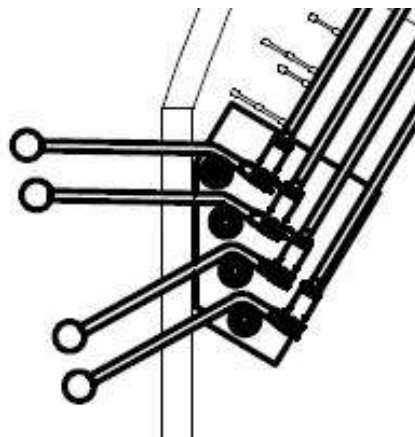
A complete packing cycle is illustrated in the following 4 pictures:



The packing cycle may be:

- Manual, when the control levers must be sustained manually, from the beginning to the end of each movement of the packing cycle.
- Semiautomatic, when the control levers are sustained by detents and are automatically unlocked at the end of the slide panel movement. This configuration requires a second subsequent actuation of the operator to complete the packing cycle.
- Automatic, with continuous or intermittent cycle, when the complete cycle is carried out via a single actuation.

In turn, the rear control unit can be operated by levers or, optionally, by pushbuttons.



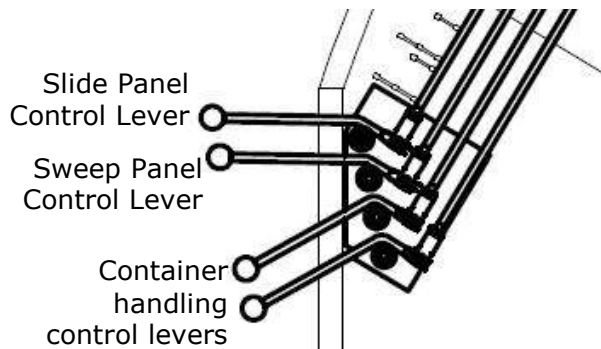
*Rear control unit
operating levers*



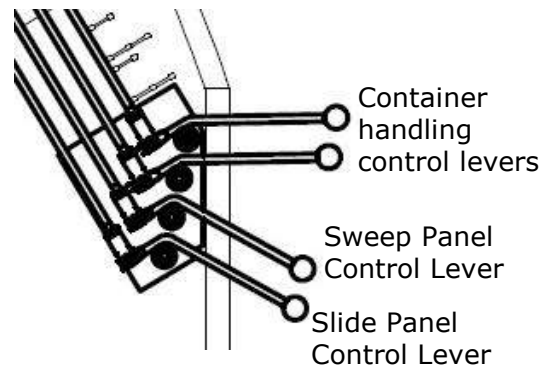
*Panel with pushbuttons for
operating the rear control unit*

Packing Cycle with Manual Operation

The packing control levers (Slide / Sweep panels) located at the rear of the vehicle on the curbside allow for manual operation of the packing system. In the manual operation, any phase may be triggered when the control lever is pulled or pushed.



Left-Hand Drive Chassis

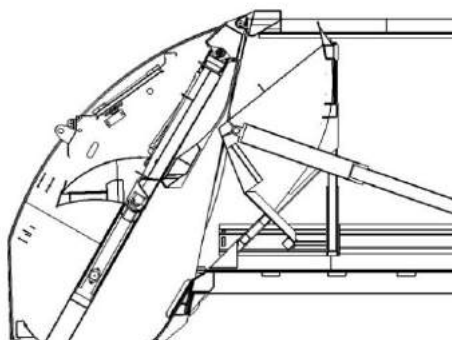


Right-Hand Drive Chassis

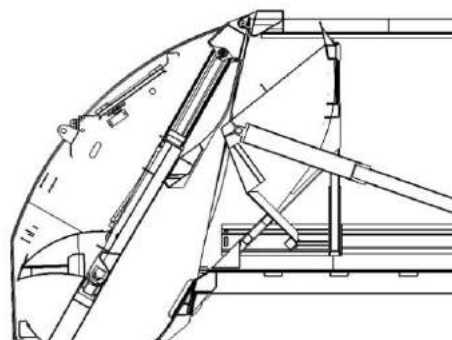
Semiautomatic Packing Cycle

The control levers (Slide / Sweep panels) located at the rear of the vehicle on the curbside allow for semiautomatic operation of the packing system.

Pull both control levers to start the first half of the packing cycle and execute the first and second phase movements. At the end of the movements, the respective levers return to neutral position automatically, by hydraulic release. At this point, the system triggers the automatic safety stop.

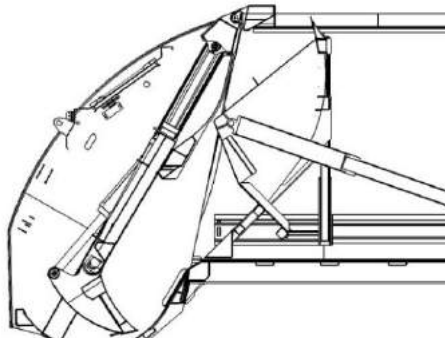


PHASE 1: Sweep panel opens

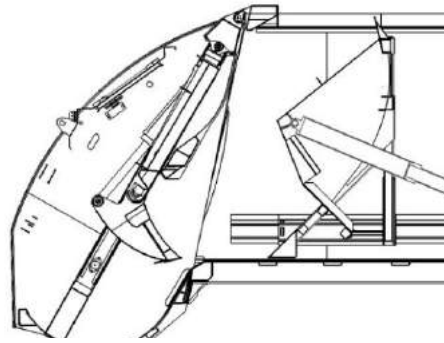


PHASE 2: Slide panel lowers

After completing the first half of the cycle, push both control levers to start the second half of the cycle and execute the third and fourth phase movements. At the end of the movements, the panels stop at the first stage starting point, ready to restart the operation.

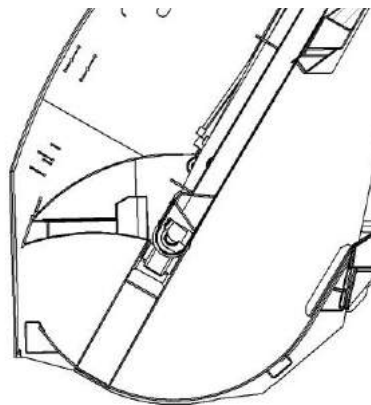


PHASE 3: Sweep panel scrapes the hopper



PHASE 4: Slide panel raises

The automatic stop in the middle of the cycle was created to prevent accidents. At this stopping point, the opening between the edge of the hopper and the sweep panel is insufficient for unloading debris, but it is wide enough to prevent trapping or fatal accidents in case of operator distraction or negligence.



"Automatic stop" position



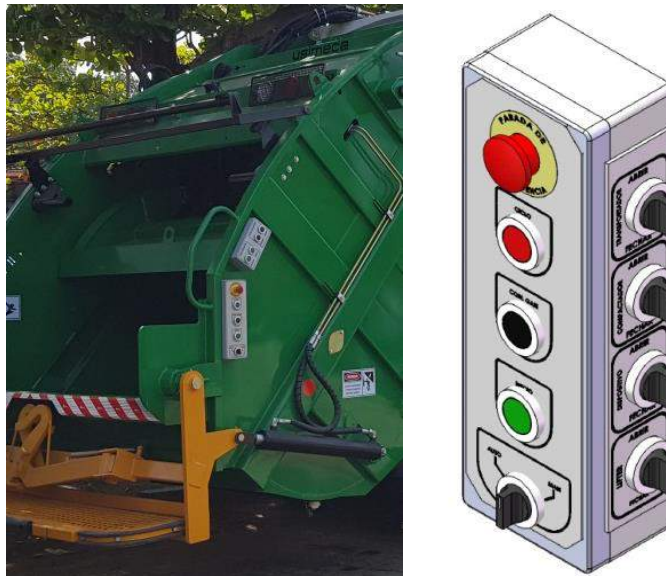
Warning!

The final half of the cycle should only be executed by the operator, after having verified the removal of everyone from the dump compartment.

Automatic Packing Cycle

The rear loader may be supplied with electric rear control unit and operating panel with pushbuttons.

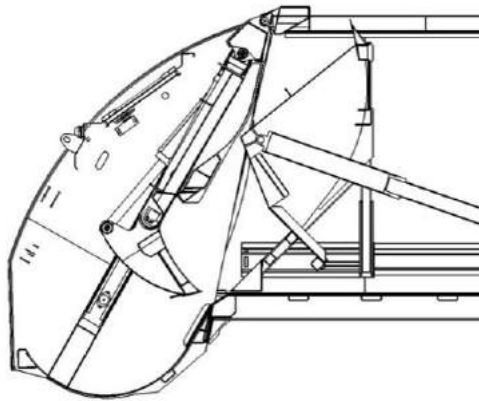
The automatic operating controls are located on the right side of the tailgate.



Control Panel

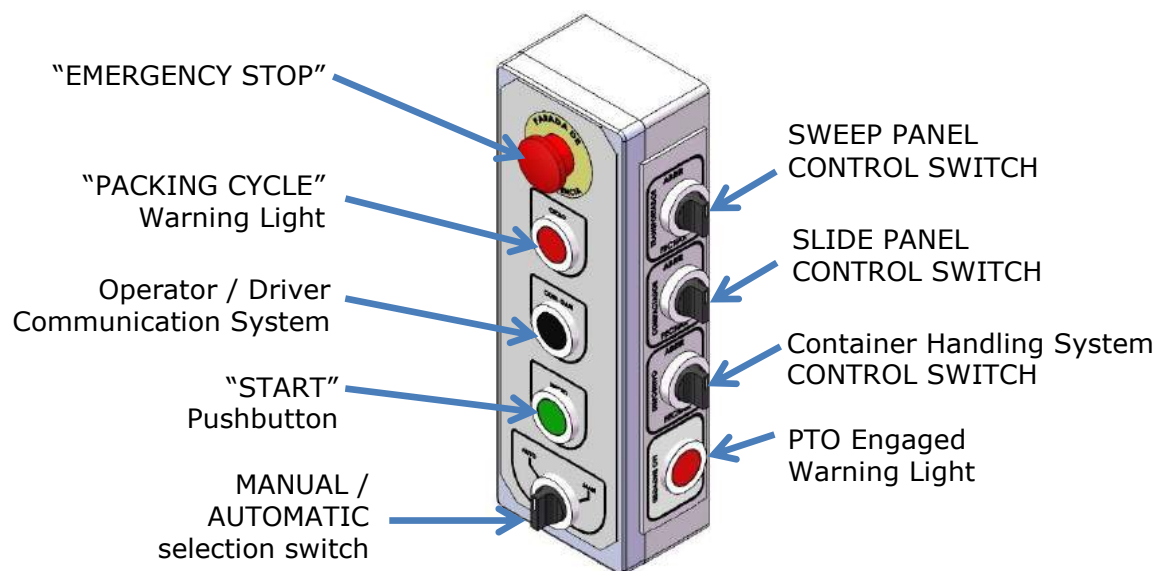
To carry out the packing cycle, proceed as follows:

- The "PTO Engaged" Warning Light comes ON when the power take-off is engaged.
- Make sure the packing panels are in starting position.



Starting Position

- Turn the "MANUAL / AUTOMATIC" selection switch to "AUTOMATIC".
- The "PACKING CYCLE" warning light will indicate when the automatic packing cycle is able
- Press the green "START" pushbutton to execute 1 complete packing cycle.
- In case of emergency, press the "EMERGENCY STOP" button to interrupt the packing cycle. To resume operation, pull the button. As a security measure, if a packing cycle is interrupted, it will not restart automatically when the "EMERGENCY STOP" button is unlocked; you need to press the "START" button again.



Change the selection switch "MANUAL/AUTOMATIC" from "AUTOMATIC" to "MANUAL", if you need to operate the panels manually. Turn the "FORWARD / RETRACT" switch to operate the respective panel, sweep or slide.

If the refuse vehicle is provided with container handling system, use the corresponding selection switch "RAISE/DOWN" to lift, dump and lower the container.

According to the NBR 14599 standard, equipment with automatic cycle requires a construction that ensures no risk point for the operator, during the packing cycle. In the rear loader in the image below, the automatic cycle only works when the hatch is closed:

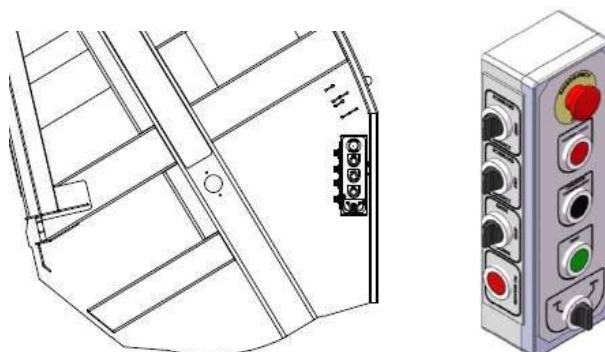


Rear Loader with rear hatch



Notes:

For right-hand drive chassis, the control panel is located on the left side of the tailgate.



Control Panel for right-hand drive chassis

Loading Troubleshooting

When there is excessive load accumulation in the hopper, the sweep panel moves back and slides over the excess waste until the end of the cycle. This function is called "Rejection" and is a design feature to protect the equipment and not a defect.

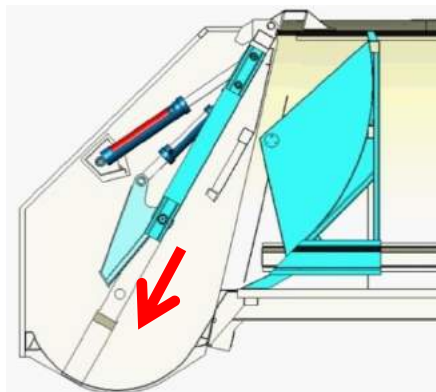
When the sweep panel repeatedly slides over the waste in the hopper, the recommendation is to load less waste in each packing cycle.

This repetition in normal operating conditions, that is, when loading is being performed without excess garbage in the hopper and with the equipment not fully loaded, may eventually represent a failure in the hydraulic setting of the sweep panel rejection. **If this occurs, adjust the regulation as specified in the pressure regulation chapter at the end of this manual.**

Forced packing of this garbage into the body becomes possible by keeping the sweep panel lever pressed, but continuing this operation will generate excessive oil heating and hydraulic system overload.

Attention!

Never use the sweep and slide panels to cut and / or divide garbage in the hopper, packing it against the edge. Using this practice will cause the panels and guides to break. Always use the complete cycle without manual interruptions, which should only be used in case of emergency.



Example of garbage cutting – improper operation

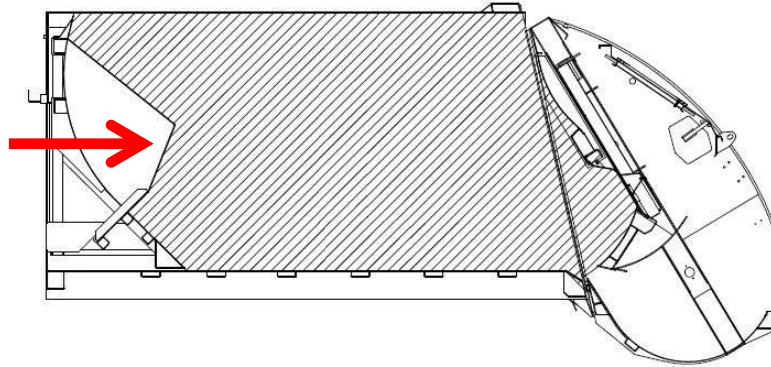
Normally, the ejector panel moves toward the front of the body automatically, through the action of the packing panels on the garbage, pushing it forward.

When the hydraulic circuit is adjusted to receive larger garbage loads, the ejector panel may eventually stop moving forward and make normal garbage packing difficult, in which case a small manual retraction of the ejector cylinder is required to allow the compacted garbage to continue moving toward the front of the body.

When the ejector panel reaches the front of the body, this means that the equipment has reached its maximum load capacity. In this case, neither the slide panel nor the sweep panel should be operated again, only what is necessary to clean the hopper and allow for lifting the tailgate for garbage leakage.

**Attention!**

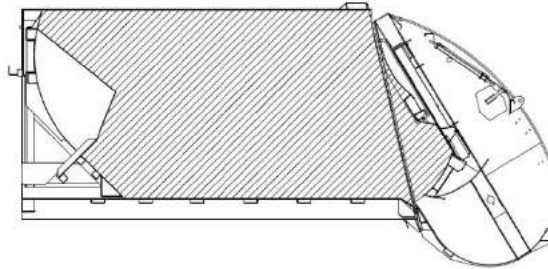
Never use the ejector panel to pack waste against the tailgate panels (backpack). The use of this practice will cause damage to the tailgate structure and the panels.



Example of improper operation

3. Unloading

The unit will be considered full when the ejector panel reaches the front of the body.



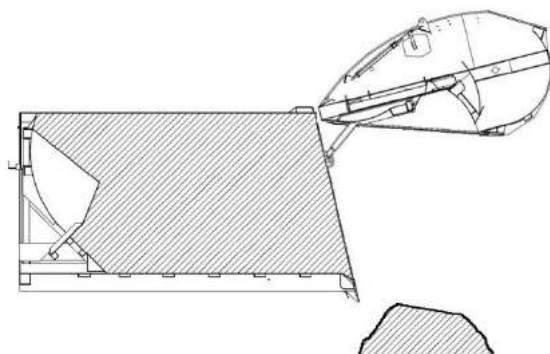
Ejector panel reaching the front of the body

The full packed debris capacity is reached when the automatic shutdown occurs in the packing cycle, before the slide panel reaches the final position. In this case, engage the packing control lever to finish the cycle at the highest pressure level, limited by the safety valve. Do not load more debris into the hopper when this degree of filling is reached.

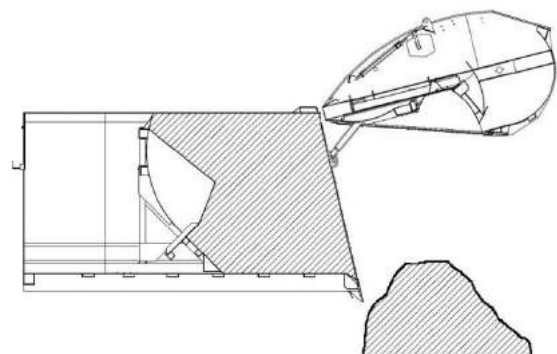
When the unit is fully loaded (garbage collection complete), ensure the PTO is not engaged, before starting your trip to the Transfer Station or Landfill.

At the appropriate location - landfill or transfer station - the complete unloading operation consists of:

- Unlocking and opening the tailgate.
- Engaging the ejector panel to eject the load out of the equipment.
- Closing and latching the tailgate.
- Retracting the ejector panel.



Tailgate Opening



Garbage Ejection

The tailgate raising and garbage ejection controls are located on the front of the body.

Procedure for Unlocking the Tailgate

Turn on the Power Take-Off and retract the ejector panel completely, to partly relieve the pressure acting against the tailgate latches.

Retraction of the sweep panel also helps relieve the pressure exerted by packed garbage against the tailgate latches.

a. Rear Loaders with Manually Loosened Latches:

As a safety measure, disengage the Power Take-Off before attempting to open the tailgate latches.

Tailgate closure is ensured by threaded locks placed on the lower sides of the tailgate. The latch is loosened initially as loosening a bolt.

To unlock the tailgate with fully packed load, loosen the latches progressively and alternately until the debris pressure against the tailgate is relieved.

Complete unlocking of only one latch when the other one is properly tightened requires not only a much greater effort in its handling, but it may also damage it by overloading action.

By releasing the latch and turning it counter-clockwise, the relieved pressure against it becomes noticeable by the decreasing force to be exerted. If the latch is too loose, turn it to the side, leaving the passage free for raising the tailgate.



Tailgate unlocked



Danger!



Attention!



Warning!

Never attempt to lock the tailgate when any of the unit's cylinders is engaged.

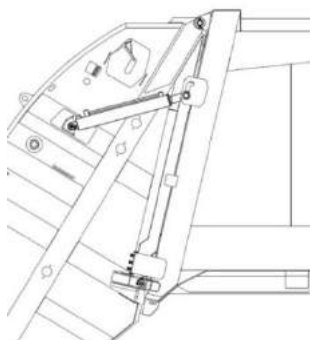
b. Rear Loaders with Automatic Tailgate Latching:

In units with automatic tailgate latching, the tailgate is latched and unlatched automatically when acting the tailgate lift cylinder.

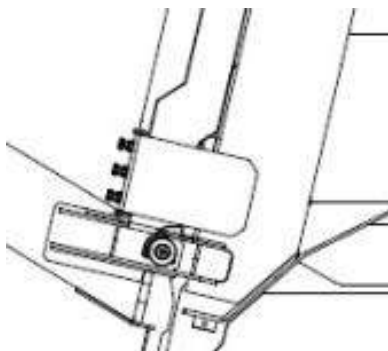


Danger!

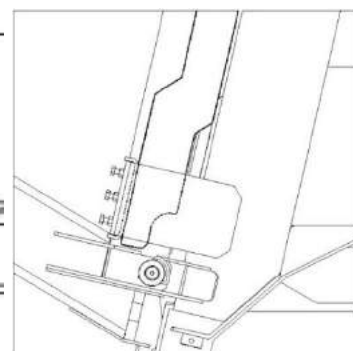
Clear the area near the tailgate of all unnecessary people for raising or lowering the tailgate.



Automatic Lock

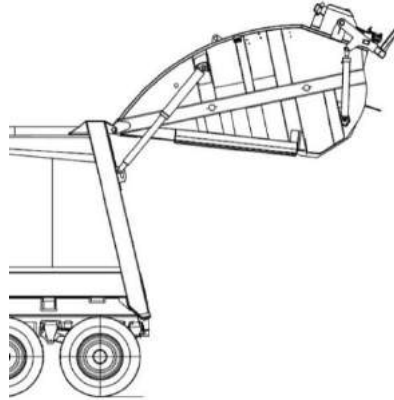


Tailgate locked



Tailgate unlocked

Raising the tailgate



Attention!

Before raising the tailgate, make sure that it is unlocked, with the latches properly positioned outward.



Latches duly arranged outward



Danger!

Clear the area near the tailgate of all unnecessary people for raising or lowering the tailgate.

Turn on power take-off.

To raise the tailgate, pull the control lever on the left side in front of the body and press the throttle advance button.



THROTTLE
ADVANCE



Danger!

A tailgate in motion is dangerous. Serious injury or death may occur if a person is struck by a moving tailgate or becomes trapped between the tailgate and the body. Before raising or lowering the tailgate you must be sure all individuals are clear of the tailgate area.

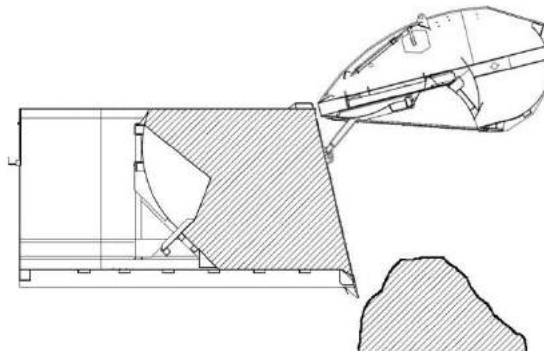
Never transit or remain under the raised tailgate or between the back part of the body and the semi-open tailgate.

Ejecting the Load

To eject the garbage, push and hold advance throttle button and pull the lever of the ejector panel control valve, extending the panel approximately 0.9 m. Then, retract the ejector panel, pushing the same lever until the panel is retracted to starting position.

Repeat the operation until the garbage is fully ejected.

Push the throttle advance button only for opening the ejector cylinder.



Garbage Ejection



Danger!

Before ejecting the garbage, check that the dump area at the back of the rear loader is free and clear of people.

Tailgate closing

Leave the ejector panel extended, drive the rear loader forward as necessary to close the tailgate freely, thus preventing it from dismantling the ejected waste pile when closing, pressing it against the body.

To lower the tailgate, push the lever lightly. The spool of the control valve is spring-centered; by releasing the lever, it returns to neutral position. This neutral position of the tailgate raising valve blocks feeding of the cylinders and the tailgate is consequently retained at any point of the route, when this circumstance is established.



Danger!

In units with manual latches, the tailgate's own weight works in favor of its descent. Therefore, sudden or very strong movements of the control lever can lead to serious accidents.

Lower the tailgate slowly.

Close the tailgate.

In models with manual latches, secure the latches firmly to achieve the necessary sealing.



Danger!

A tailgate in motion is dangerous. Serious injury or death may occur if a person is struck by a moving tailgate or becomes trapped between the tailgate and the body.

Before closing the tailgate, make sure that no person is nearby who could be struck by it.



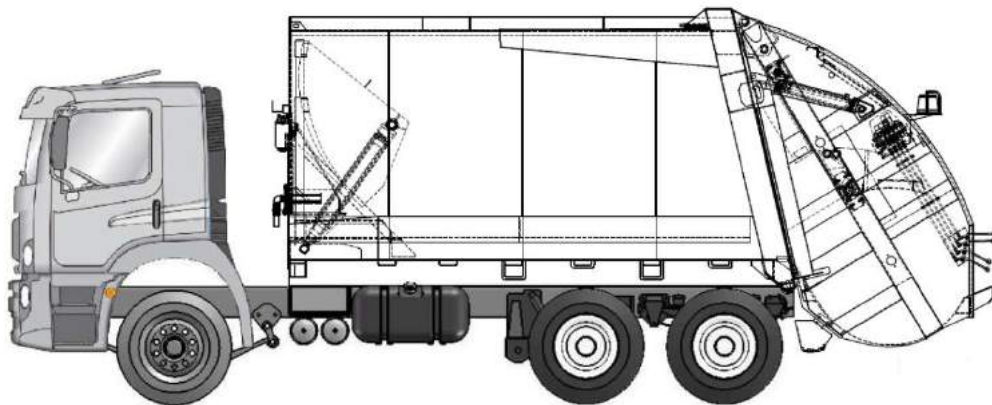
Attention!

Never drive the vehicle when the tailgate is raised; Only move it forward enough to allow the tailgate to close.

Before leaving the landfill or transfer station

Retract the ejector panel until it touches the front of the body. Driving the rear loader with the telescopic ejection cylinder extended can cause premature wear on the guide bushings and their seals.

Turn off power take-off before starting to move the vehicle.



Ejector panel retracted

E. Maintenance

There are four factors that define the durability of your rear loader: application, installation, operation and periodic maintenance.

This chapter contains detailed instructions for maintaining your rear loader.



Attention!

DEFICIENT MAINTENANCE VOIDS THE EQUIPMENT'S WARRANTY!

1. Preventive Maintenance

Preventive maintenance includes every systematic control and monitoring action, for the purpose of reducing or preventing failures in equipment performance. Maintenance increases reliability and leads the equipment to always operate in condition similar to that in which it left the factory.

Preventive maintenance schedules equipment repairs and is usually the cheapest and most guaranteed form of maintenance, correcting defects before they occur.

As a result of the experience of various customers and aiming to help increase the equipment's service life, we recommend the Maintenance Plans presented below:

- **DAILY INSPECTION ACTIVITIES:** before the collection operation.
- **HYDRAULIC SYSTEM COMMISSIONING:** performed at 60 and 120 hours.
- **S PLAN (Simple Maintenance):** every 75 hours.
- **L PLAN (Light Maintenance):** every 450 hours.
- **M PLAN (Medium Maintenance):** every 2,700 hours.
- **MP1 Plan (Main Preventive 1):** every 5,400 hours (M+MP1 activities).
- **MP2 Plan (Main Preventive 2):** every 8,100 hours (M+MP2 activities).
- **MP3 Plan (Main Prev. 3):** every 10,800 hours (M+MP1+MP3 activities).
- **R PLAN (Reform+Prev.):** every 16,200 hours (M+MP1+MP2+R activities).



Notes:

All maintenance frequencies refer to the vehicle's engine operating time.

The checklists of activities and for each type of maintenance are available in the "Attachments" chapter at the end of this Manual.

HOUR	TYPE	HOUR	TYPE	HOUR	TYPE	HOUR	TYPE	HOUR	TYPE
450	L	5850	L	11250	L	16650	L	22050	L
900	L	6300	L	11700	L	17100	L	22500	L
1350	L	6750	L	12150	L	17550	L	22950	L
1800	L	7200	L	12600	L	18000	L	23400	L
2250	L	7650	L	13050	L	18450	L	23850	L
2700	M	8100	MP2	13500	M	18900	M	24300	MP2
3150	L	8550	L	13950	L	19350	L	24750	L
3600	L	9000	L	14400	L	19800	L	25200	L
4050	L	9450	L	14850	L	20250	L	25650	L
4500	L	9900	L	15300	L	20700	L	26100	L
4950	L	10350	L	15750	L	21150	L	26550	L
5400	MP1	10800	MP3	16200	R	21600	MP3	27000	MP1



Danger!

Never transit or remain under the raised tailgate or between the back part of the body and the semi-open tailgate.

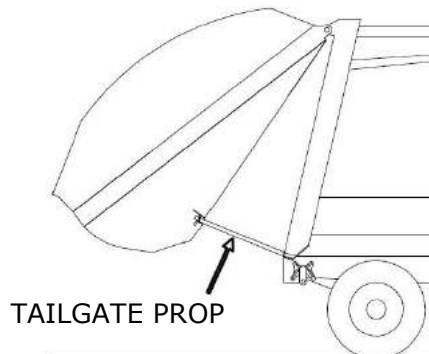
Always prop the tailgate when you leave it raised for maintenance, service or cleaning procedures.

Serious injury or death may occur if any part of your body is between the tailgate and the body if the tailgate suddenly closes.



Note:

Raise the tailgate enough to open the tailgate prop away from the body. Lower the tailgate until the tailgate prop securely rests in its pin on the body.



External / Internal Washing

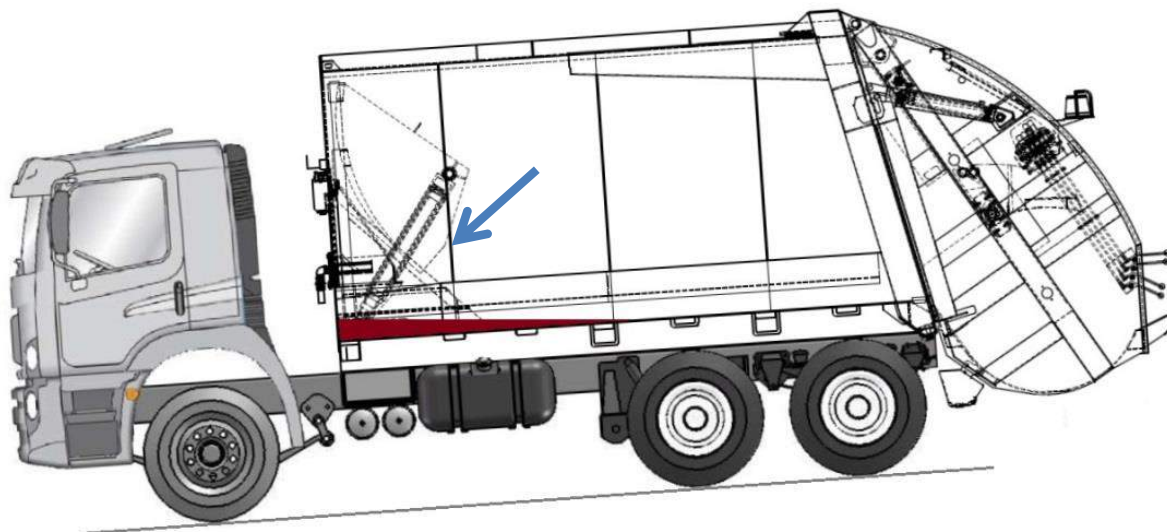
A lack of cleaning compromises the durability of the steel, because the accumulated leachate precipitates alveolar corrosion of the steel, reducing its service life.



Example of alveolar corrosion

External and internal washing is recommended after each collection / unloading operation, with special attention to the hopper and body floor, with water and neutral soap. If this is not possible, this procedure should be performed at least 3 times a week.

Also observe the position where the vehicle is parked. A slight slope generates leachate accumulation in the front section of the body floor and may accentuate its corrosion.



Example of Leachate accumulation



Attention!

*Do not use a caustic alkaline product (high concentration of caustic soda) or any other similar product. These types of products will degrade rubber, paint, electrical components and even the steel of the equipment. **The application of these products will lead to loss of warranty of the damaged components.***

Power Take-Off



Attention!

The power take-off may be provided by Usimeca, by the chassis manufacturer or even by a third party, hired by the customer.

We recommend that, for proper operation and maintenance of the Power Take-Off, the guidelines contained in the manufacturer's manual for the power take-off mounted on your equipment be followed.

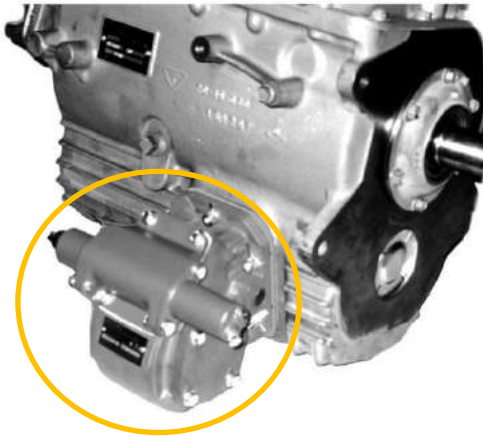
The information contained in this manual has been obtained through our field experience over the years.

If there is any discrepancy between the Usimeca manual and the power take-off manual, always consider the recommendations of the power take-off manufacturer so that there is no loss of warranty.

Always refer to the catalogues, literature and owner's manuals from the power take-off manufacturer.

Auxiliary power take-off coupled to the transmission

Please refer to the power take-off manufacturer's manual for its proper maintenance.



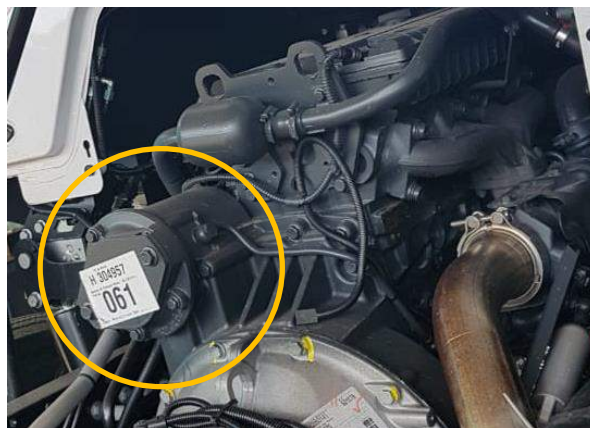
Power take-off with
manual transmission



Power take-off with
automatic transmission

Rear Power Take-Off (REPTO)

Please refer to the chassis manufacturer's manual for its proper maintenance.



Rear Power Take-Off (REPTO)

Pump

The properly installed and operated pump will provide service for a long period of time, requiring little maintenance or repair.

We emphasize the general precautions that must be observed by the user in order to obtain long service life of the pump.

- A. Follow the Power Take-Off or REPTO Lubrication recommendations according to the manual from their respective manufacturers. The correct lubrication of the PTOs or REPTO will not only preserve its splines, but will also prevent wear of the pump splined shaft. Failure to perform this power take-off maintenance procedure can lead to the problem known as "fretting".

**Notes:**

Fretting is a well-known phenomenon studied by the manufacturers of splined coupling and is basically a LOCALIZED CORROSION caused by vibration and high stress between contact surfaces, accelerated by oxidation in the coupling. Below are pictures of a typical Fretting case:



The way to prevent accelerated Fretting progression is proper lubrication of the coupling, PURSUANT TO THE POWER TAKE-OFF MANUFACTURER'S INSTRUCTIONS.

- B. Weekly or every 75 hours, check the proper tightness of pump mounting bolts in the power take-off or in the REPTO. Loose pump clamping bolts can also contribute to wear of the pump splined shaft or the PTO / REPTO splines. Therefore, make sure that everything is properly tightened.
- C. When performing any service on the hydraulic circuit, be careful not to introduce dirt into the system.
- D. Perform oil filtering (flushing) at the frequency recommended in this manual (uncontaminated oil).
- E. Do not start the pump when the oil level in the oil reservoir is low, because there is insufficient oil to feed and lubricate it (risk of pump cavitation).

**Attention!**

Pump cavitation will damage the pump rotating assembly, generating loss of system efficiency or even pump failure in more extreme cases.

Pump coupled to the Power Take-Off

- A. If the power take-off assembly requires a bracket for the hydraulic pump, the respective bolts for fixing the bracket should be inspected weekly or every 75 hours.
- B. Before setting the Rear Loader in motion, the power take-off needs to be switched off so as not to impair the durability of the transmission, unless the power take-off is designed for this ("Hot Shift" model).
- C. If the pump has a cardan shaft, weekly or every 75 hours check if the universal joints of the cardan shaft are tight in the shafts, properly secured to prevent vibration.

-
- D. In the case of “wet-spline” self-lubricating PTOs, check for leaks through the pump flange seal and power take-off. Also check for oil leakage (hydraulic or transmission) through the pump drain, which indicates poor operation of the pump flange retainers.

Pump coupled to the Flywheel (REPTO) or to the “Wet-spline” PTO

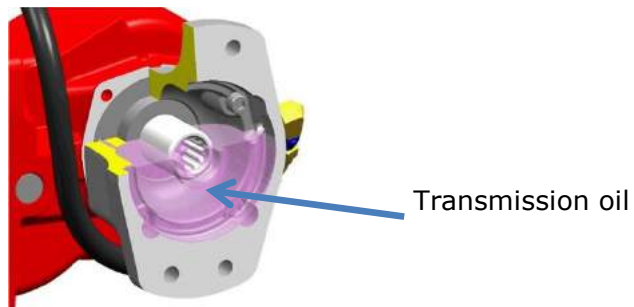
Weekly or every 75 hours, check for oil leaking from the flywheel or from the transmission via the REPTO or PTO gasket if they are of the “wet-spline” (self-lubricating) type. Also check whether there is leakage through the pump drain.



Pump coupled to the Power take-off

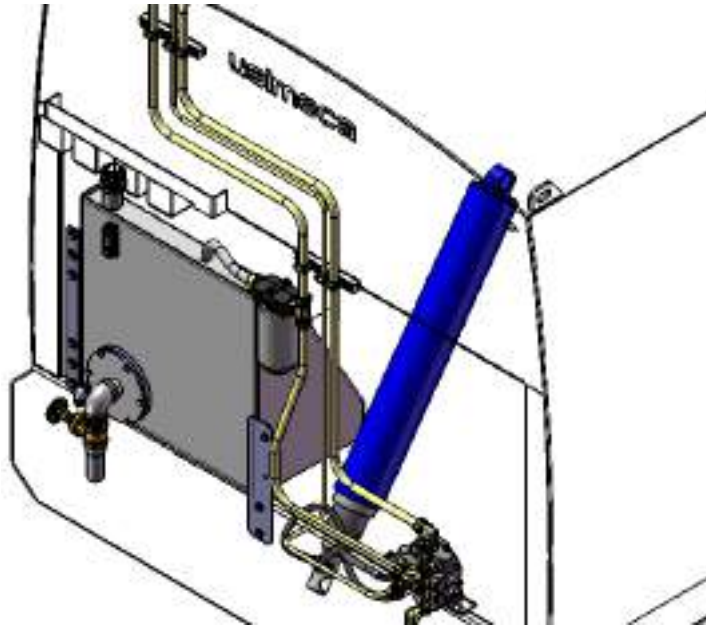


Pump coupled to the REPTO



Example of “wet spline” (self-lubricating) type of PTO

Hydraulic System



Hydraulic Oil Reservoir

Capacity of the Hydraulic Oil Reservoir	160 liters
Total Capacity of the Hydraulic System	200 liters
System pressure (General)	170 to 175 bar
Suction Filter	Reusable steel mesh (as long as cleaning is performed according to the instructions in the Suction Oil Filter item)
Return Filter	Element with 10 µm
Standard Pump	Fixed displacement hydraulic gear pump
Optional Pump	Fixed displacement hydraulic vane pump

Hydraulic Oil

It has been proven that more than 90% of all hydraulic problems are directly linked to oil quality. Invisible amounts of abrasives can cause serious problems in the pump and its operation. It is important for all foreign matter and the mixture with water stay out of the hydraulic oil.

Keep the rear loader oil within the original specifications, analyzing regularly in accredited laboratories. Consult your hydraulic oil supplier.

Change the oil and filters in the periods recommended by Usimeca in this Owner's Manual.

Recommended type of hydraulic oil

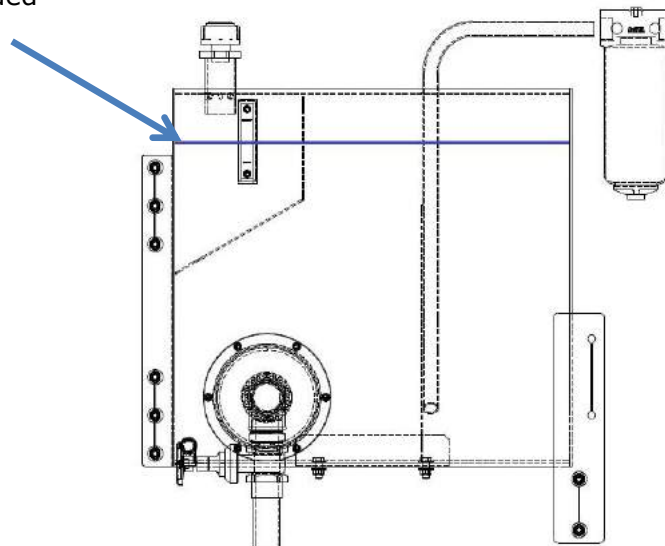
Manufacturer	Product
Atlantic	Ideal AW 68
Castrol	Hyspin 68
Tutela	Acer 68
Esso	NUTO H 68
Ipiranga	Ipitur AW 68
Mobil	DTE 26 or 27
Petrobras	Lubrax INDL HR 68 EP
Shell	Tellus T 68
Texaco	Rando oil HD 68

Hydraulic Oil Level in the Reservoir

Perform the daily control through the level indicator mounted in the reservoir, which is located on the front right side of the body.

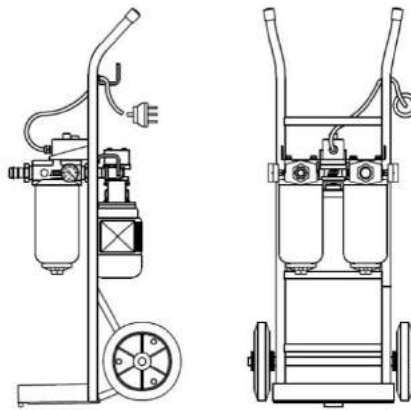
The oil level should be checked with all cylinders in retracted (closed) position and the power take-off turned off. The level should be kept approximately in the center of the level indicator, between the minimum and maximum limits.

Recommended
oil level



External hydraulic oil filtering (Flushing)

We recommend total filtration of the hydraulic oil monthly or every 450 hours, using an external filtering unit connected to the rear loader's hydraulic reservoir.



Example of External Filtering Unit

To do this, the breather cap should be removed and the suction and return hoses of the filtering unit should be passed through the hole in the reservoir, with the suction lower inside the reservoir, but both submerged in the hydraulic oil.

The filtering unit should be equipped with a flow rate pump of approximately twenty-eight (28) liters per minute, driven by an electric motor, with two (2) filters: one in the suction line, of ten (10) absolute microns, and another in the pump outlet line, of fiber, with mesh of three (3) absolute microns and beta greater than 75 (efficiency).

Leave the unit running for at least one (1) hour and reassemble the breather cap after cleaning it with compressed air.

The recommended intervals for total hydraulic oil change, reservoir cleaning, return element replacement, cylinder and pump repair replacement must be met, regardless of this external filtering process.

Hydraulic oil change

We recommend doing the first hydraulic system oil change after the first 2,700 hours of operation. Subsequent changes should be performed every 2,700 hours (2nd change: 5400 hours, 3rd change: 8100 hours, 4th change: 10,800 hours, etc.), provided that the external filtering interval is met.

Never mix oils of different types or from different manufacturers.

At each oil change, the reservoir should be cleaned inside with ISOPROPYL alcohol, using a cloth, so that the new oil is not contaminated with impurities, which can cause serious damage to the equipment.



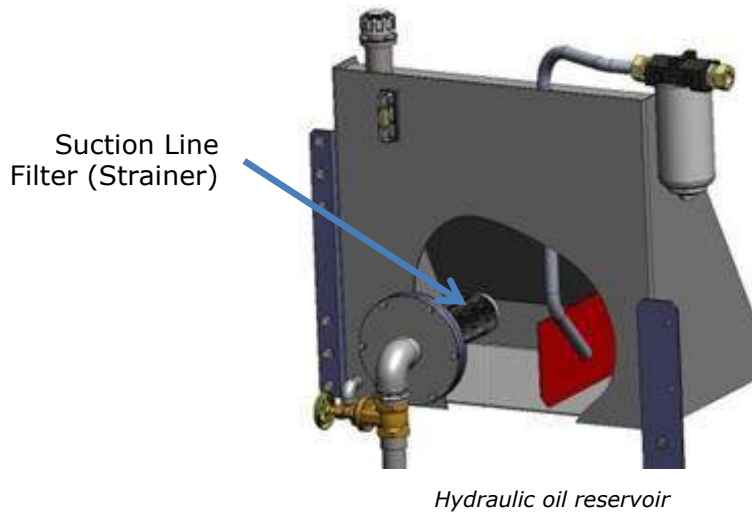
Attention!

Never use a rag to clean the oil reservoir or any hydraulic component.

Never use engine oil or automatic transmission fluid (ATF) and never add diesel oil, kerosene, gear oil and / or differential oil to the hydraulic oil. The service life of all hydraulic system components will be seriously impaired.

Never use detergent oil or used oil in the hydraulic system.

Suction Line Filter (Strainer)



The strainer (suction line filtration – reusable wire, mesh type) located inside the oil reservoir eliminates the possibility of particles and foreign matter entering the circuit that causes damage to the hydraulic components.

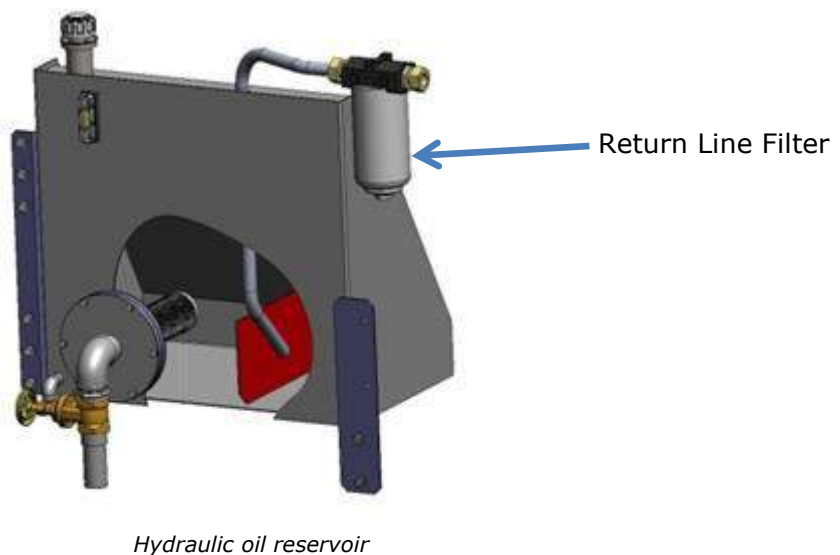
To maintain the operational efficiency of the system, it must be cleaned or replaced at each filtering (450 hours) or hydraulic oil change (1st change at 2,700 hours).

Only 1 cleaning is recommended. Afterward, it should be replaced.

Cleaning can be performed using Isopropyl alcohol and blowing with compressed air at low pressure, from the inside outward, in order to remove all retained impurities.

Before removing the strainer for cleaning, disconnect the suction hose from the pump and drain the oil from the reservoir. Loosen the bolts of the flange and remove the strainer carefully so as not to damage it. After cleaning, assemble it again, putting joints on the thread and tightening it securely.

Return Line Filter



The return line filter is a vital component for the rear loader's entire hydraulic system. It prevents foreign particles (above 10 Micron) from entering the oil reservoir. Without this proper filtering, problems may occur in important components of the hydraulic system, such as pumps, cylinders and control valves, compromising their service life.



Notes:

During the hydraulic system commissioning period, replace the filter element after the first 60 hours of equipment use, characterized by actual operation of the hydraulic pump. The second change should be 60 hours after the first (120 total hours of operation).

Subsequent changes should be every 450 hours of actual use of the hydraulic pump.

If the return line filter has a saturation indicator, the filter element should be replaced as indicated.

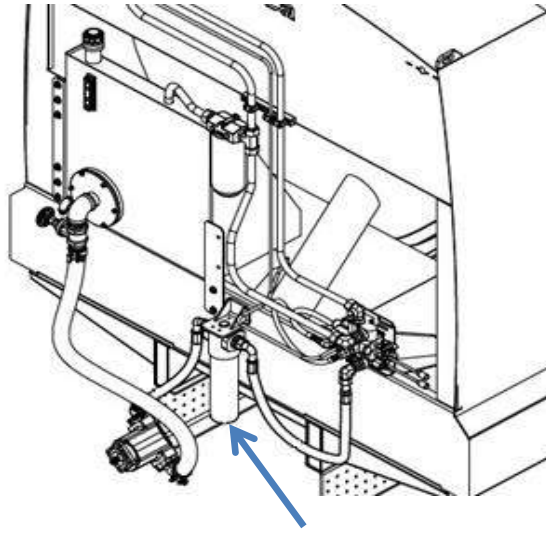
Under severe operating conditions, the service life of the filter element will be reduced.

Whenever you replace the filter element, also replace the seals.



Filter element with seals

Pressure Line Filter



Pressure Line Filter

The pressure line filter is an optional component for the rear loader's hydraulic system that is connected right after the pump pressure line. Its main function is to protect critical components, such as control valves and cylinders, from particles that can travel through the hydraulic system at high pressure.

These particles can cause damage or malfunction of these important equipment components. The pressure line filter works in conjunction with the return line filter and the suction line filter (strainer).



Notes:

Replace the filter element after the first 60 hours of equipment use, characterized by actual operation of the hydraulic pump.

The second change should come 60 hours after the first. Subsequent changes should be every 450 hours of actual use of the hydraulic pump.

If the filter has a saturation indicator, the filter element should be replaced as indicated.

Under severe operating conditions, the service life of the filter element will be reduced.

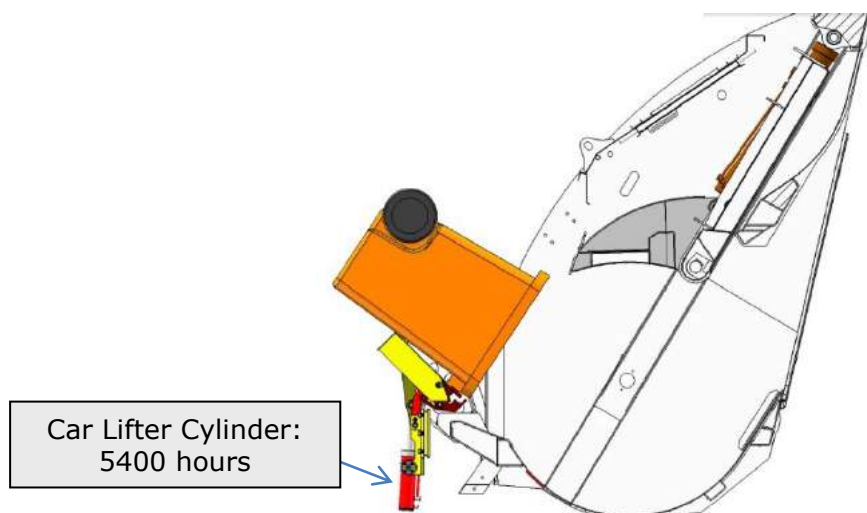
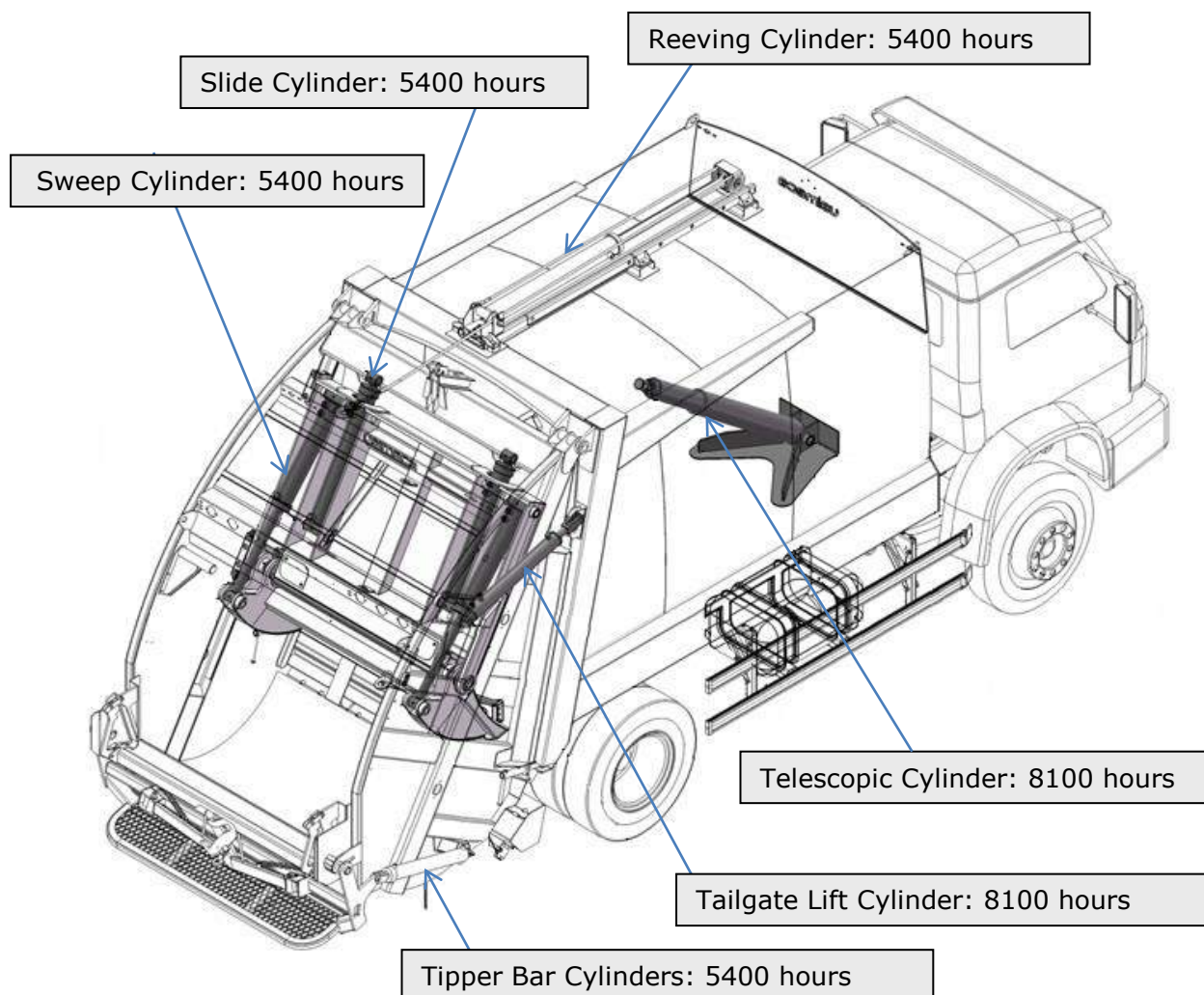
Whenever you replace the filter element, also replace the seals.

Cylinders

The cylinders pivot pins should be checked weekly for wear and proper mounting. All pivot pins should be lubricated once a week or every 75 hours with automotive grease.

A thin film of hydraulic oil on the rod and on the cylinder gland, in extended position, is desirable. However, constant oil dripping indicates that the cylinder requires repair service.

Periodically, both rod and gland of each cylinder must be inspected for scratches or scrapes, which may cause damage and even total loss of the seals and piston. Any defect of this kind must be eliminated by sanding, polishing or even replacement to prevent further damage to the cylinder. Replace hydraulic cylinder seals according to the hours recommended below:



The recommended times are valid as long as the recommendations for oil changes, filters, lubrication plan and inspection list are followed.

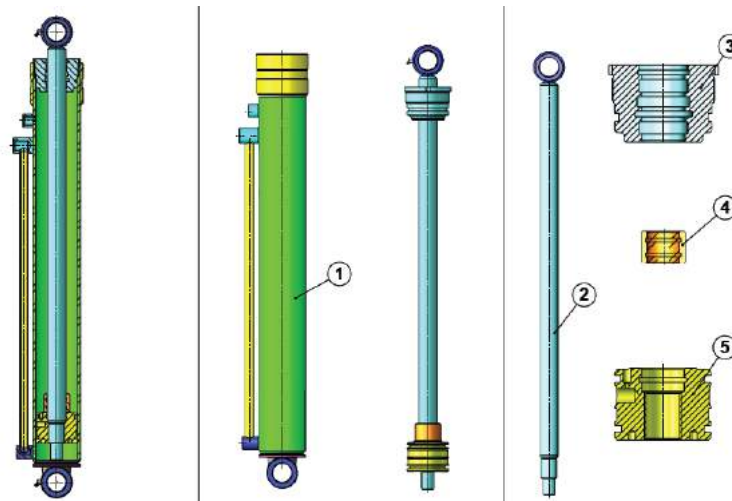
Hydraulic Cylinder Disassembly / Reassembly Procedure

The procedure below was created for the purpose of, at the time of cylinder repair activities, guidance on the right way to handle them in case of urgency.

Because these are items of vital importance for major operation complexity equipment, we recommend that cylinder maintenance always be performed by specialized companies.

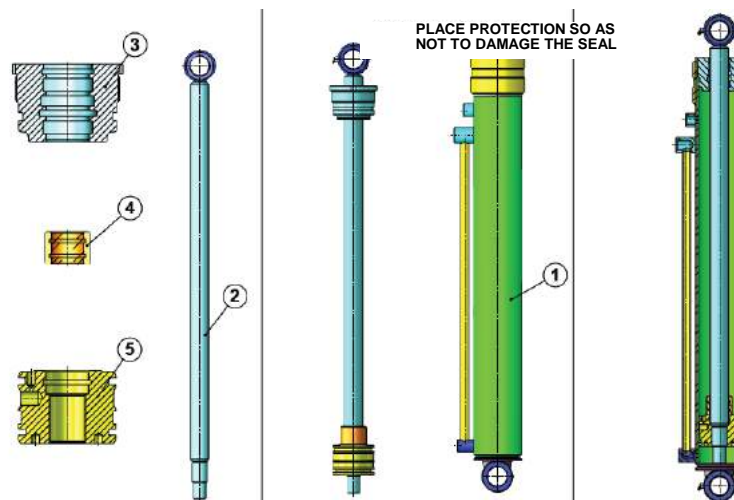
Disassembly

1. Extend the cylinder bar.
2. Unscrew the gland (pos. 3).
3. Pull the rod assembly out of the barrel (pos. 1).
4. Secure the rod assembly to a clamp.
5. Apply heat to the piston (pos. 5) with a blowtorch for 5 minutes to break the chemical lock.
6. Unscrew the piston and remove items 5, 4 and 3 from the rod assembly (pos. 2).

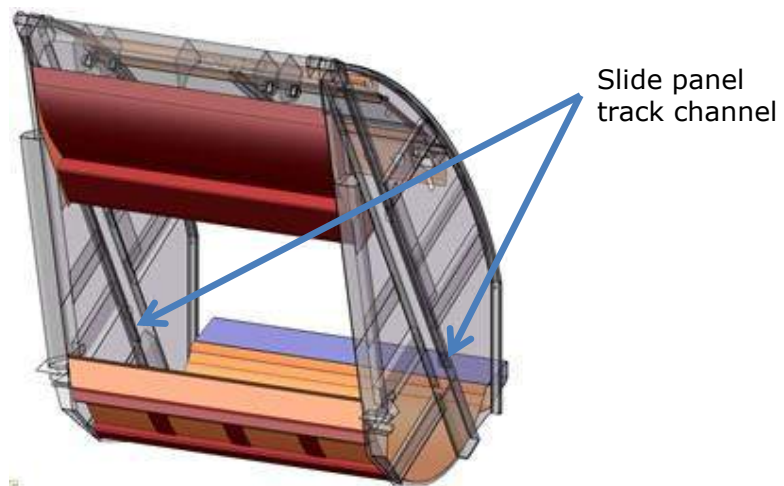
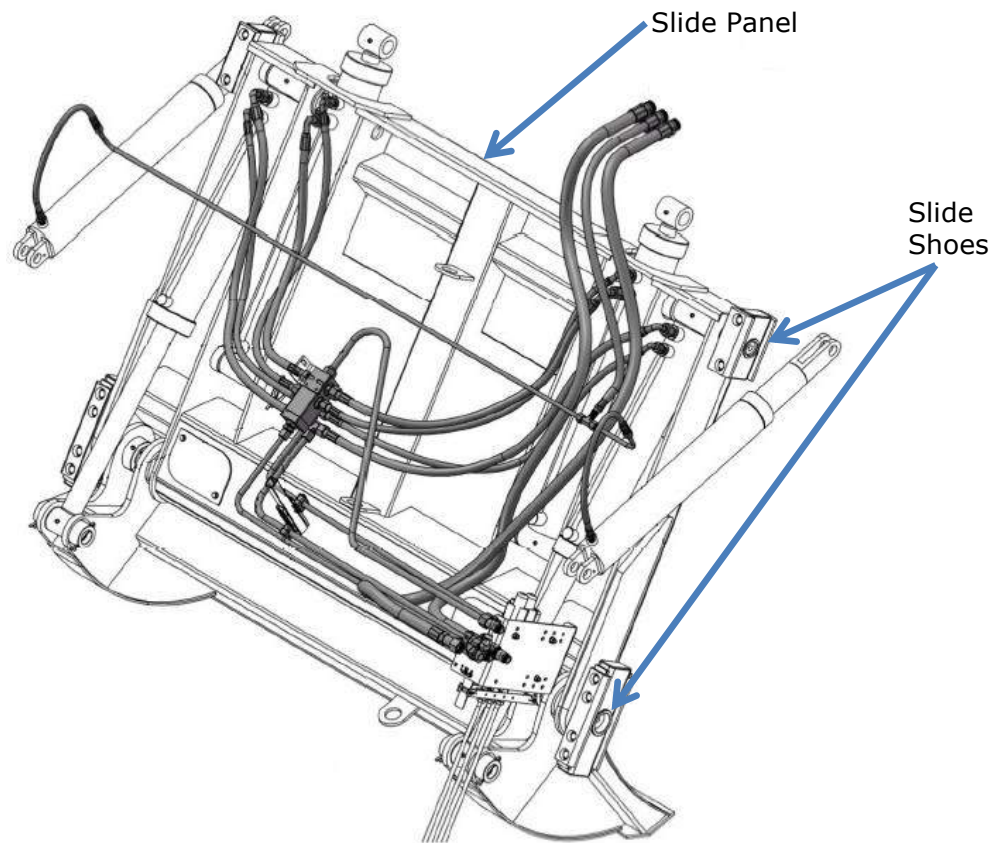


Assembly

1. Place items 3, 4 and 5 on the rod assembly (pos. 2).
2. Place chemical lock (PARKER TL 86).
3. Apply torque.
4. Wait 2 hours for the chemical lock to cure.
5. Place the barrel (pos. 1) vertical with the opened end turned upward.
6. Lubricate the piston.
7. Place the thread protector.
8. Couple the gland (pos. 3) in the barrel (pos. 1) and apply torque.



Slide Panel



The slide panel has four slide shoes to go along the track channels on the tailgate.

The slide panel track channels should be kept clean. Check the condition of track channels daily and clean if necessary.



Attention!

Do not lubricate the track channels.

If the shoes make a loud noise when the slide panel is moving, please contact Usimeca technical assistance.

Slide Shoes

When slide shoes start showing wear, they can be rotated to reduce the clearance between shoes and track channels, increasing their service life.

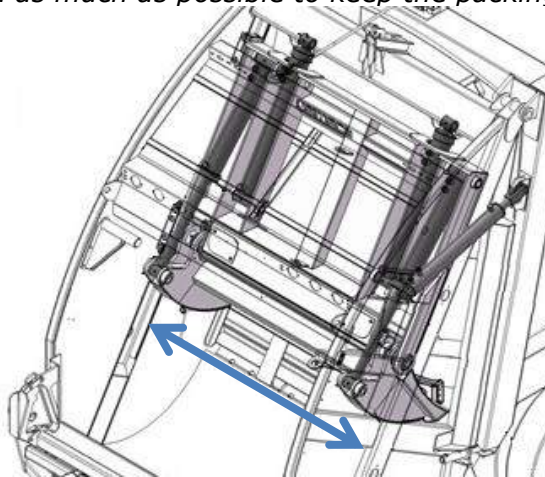
This procedure may only be performed once. After this, the wear plates must be replaced.

Invert or replace the four slide shoes every 5400 hours.



Attention!

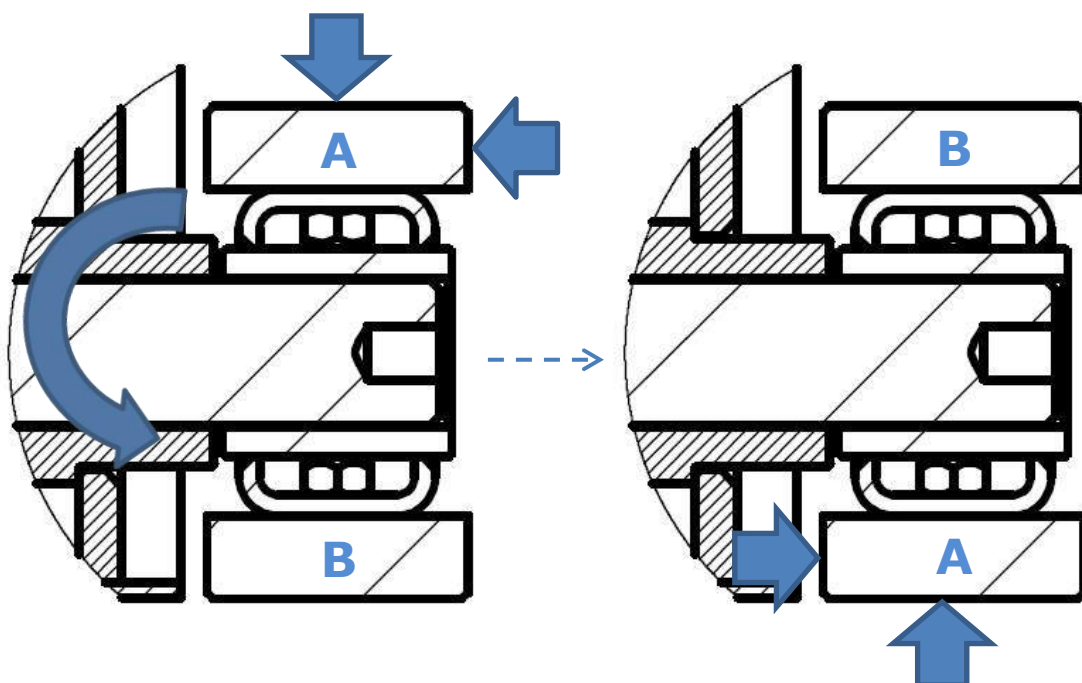
Slide shoes rotation is a recommended practice, provided that the side clearance is ensured and preserved as much as possible to keep the packing cylinders working well.



Side clearance

Upper Slide Shoes

Rotating the upper slide shoes as indicated in the illustration below is recommended: the original outer and upper faces, which had greater wear, should be turned inward and downward, respectively.

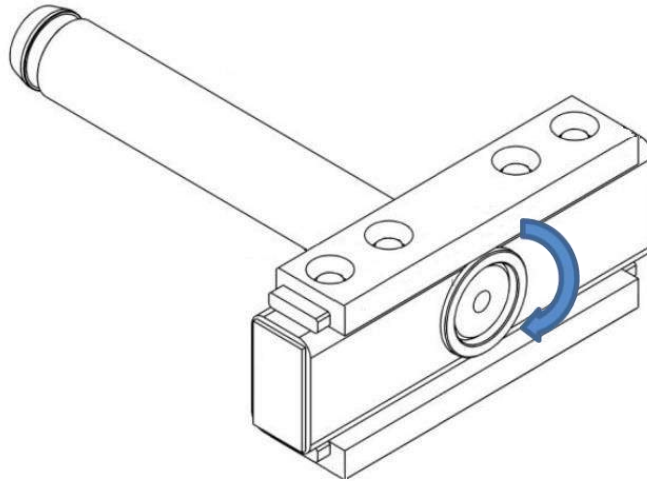


BEFORE

AFTER

Lower Slide Shoes

The lower slide shoe is asymmetrical. It is thus only possible to offset the wear of the upper side. Rotate the slide shoes on the shaft itself, so that the original upper face, which had greater wear, is now facing downward.



If side wear and clearance is observed, the wear plates must be replaced.

Ejector Panel

The ejector panel travels the entire length of the body between steel guides properly arranged on its sides. It is important to check the general condition of guides periodically.

It is important to keep guides well lubricated with automotive grease. Application should be done with a brush, weekly or every 75 hours.

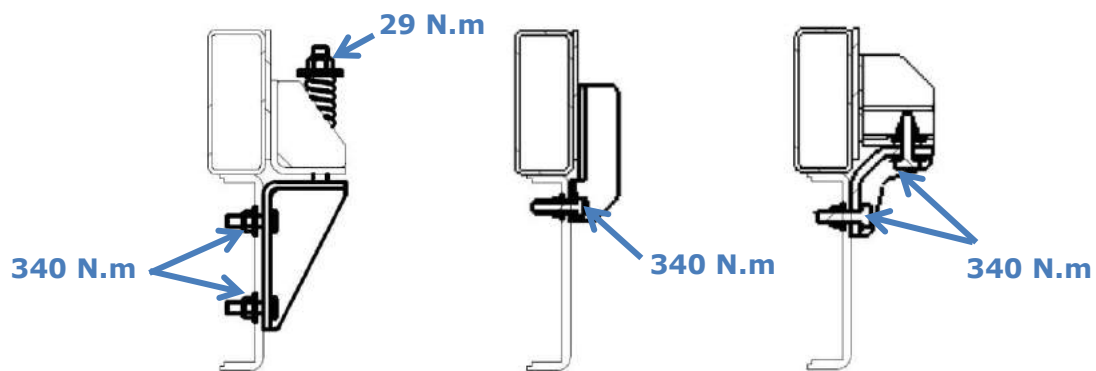
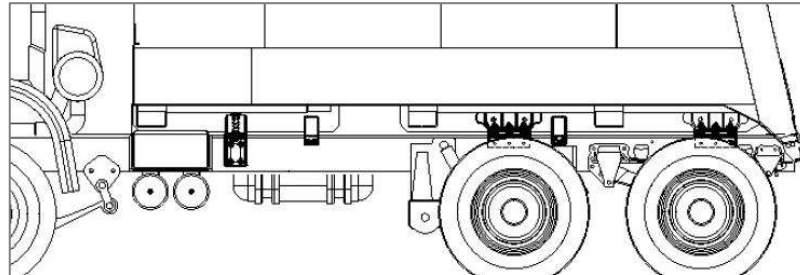
The entire length of the guides must be inspected and cleaned by removing any accumulation of waste or debris found.



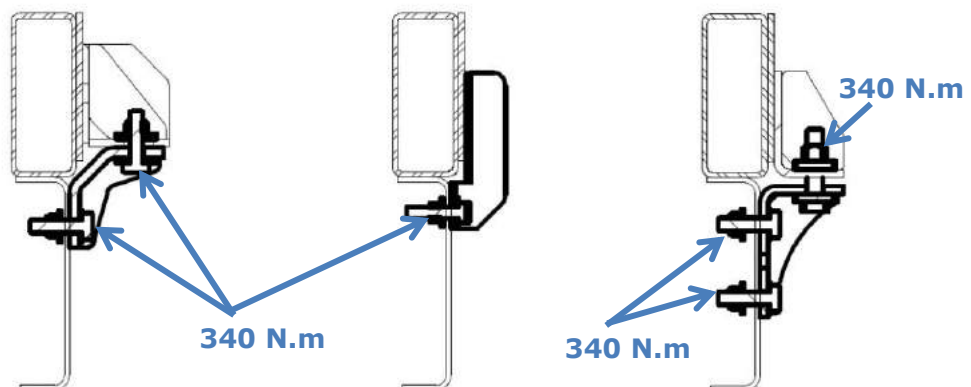
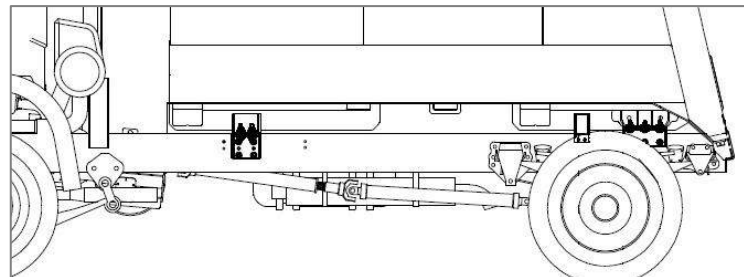
Ejector
panel guides

Mounting System

It is recommended that all bolts attaching the body to the chassis be inspected weekly or every 75 hours, and retightened if necessary. Otherwise, the mounting system gets overloaded, causing the appearance of cracks in the mounting brackets or stringers, which compromises the structure of the equipment as a whole.



Example of 6x2 chassis mounting system



Example of 4x2 chassis mounting system

 **Danger!**  **Warning!**

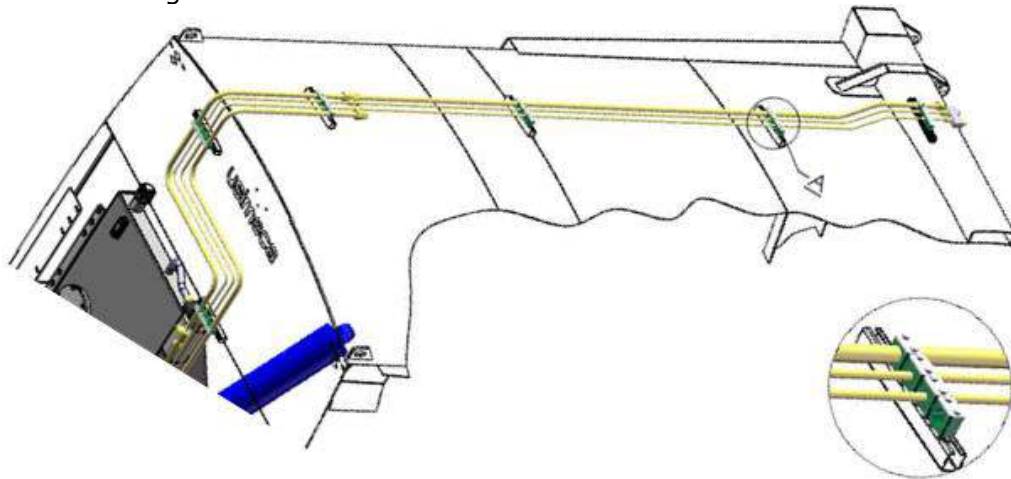
Insufficient tightness of the chassis mounting bolts may lead to, apart from damage to the chassis, serious risk of accidents, such as the truck tipping over, for example. An accident of this kind can have fatal victims as a result.

Tubes and Hoses

Because they are responsible for conducting oil to the various cylinders, they demand a strict routine of checking for leaks.

Tubes and hoses should be inspected for leaks weekly or every 75 hours. Retighten the connections if necessary. If the leak persists, check whether the o-rings are in good condition. If they are split or damaged, they will need to be replaced.

The hydraulic pipe clamps should also be checked weekly or every 75 hours and tightened whenever necessary, otherwise the equipment's natural shaking could lead to the occurrence of cracks in the flanging of hydraulic pipes, in the hose connections or rupture of the o-rings.

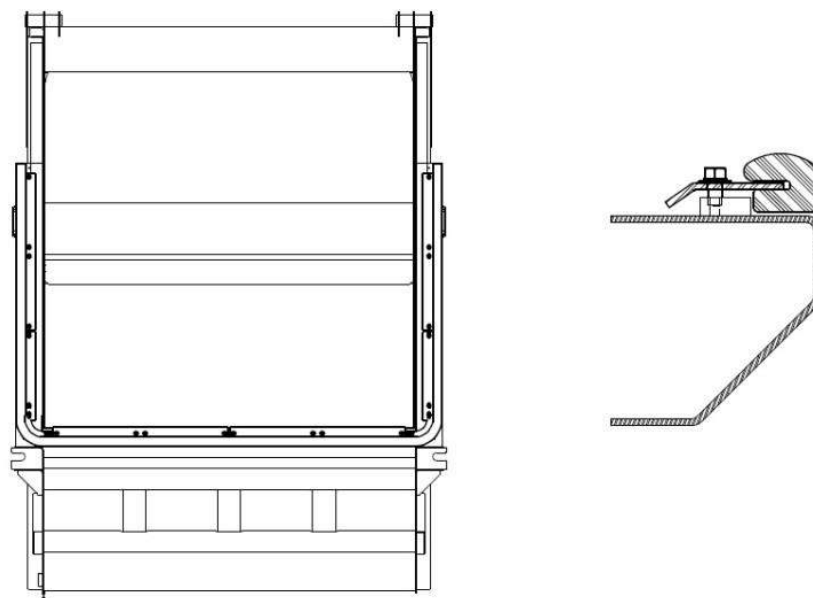


Tailgate Sealing System

Inspecting the rubber seal weekly or every 75 hours is recommended, to check its condition and replace it if necessary, to ensure water-tightness.

Keep the rubber seal in perfect working order and check the bolts of the mounting strips weekly, proceeding with tightening whenever necessary (22 Nm torque on bolts).

If the absence of bolts or strips is verified, proceed with immediate replacement to prevent damage to the rubber seal. In these cases, any damage to the rubber seal will not be covered by the warranty.

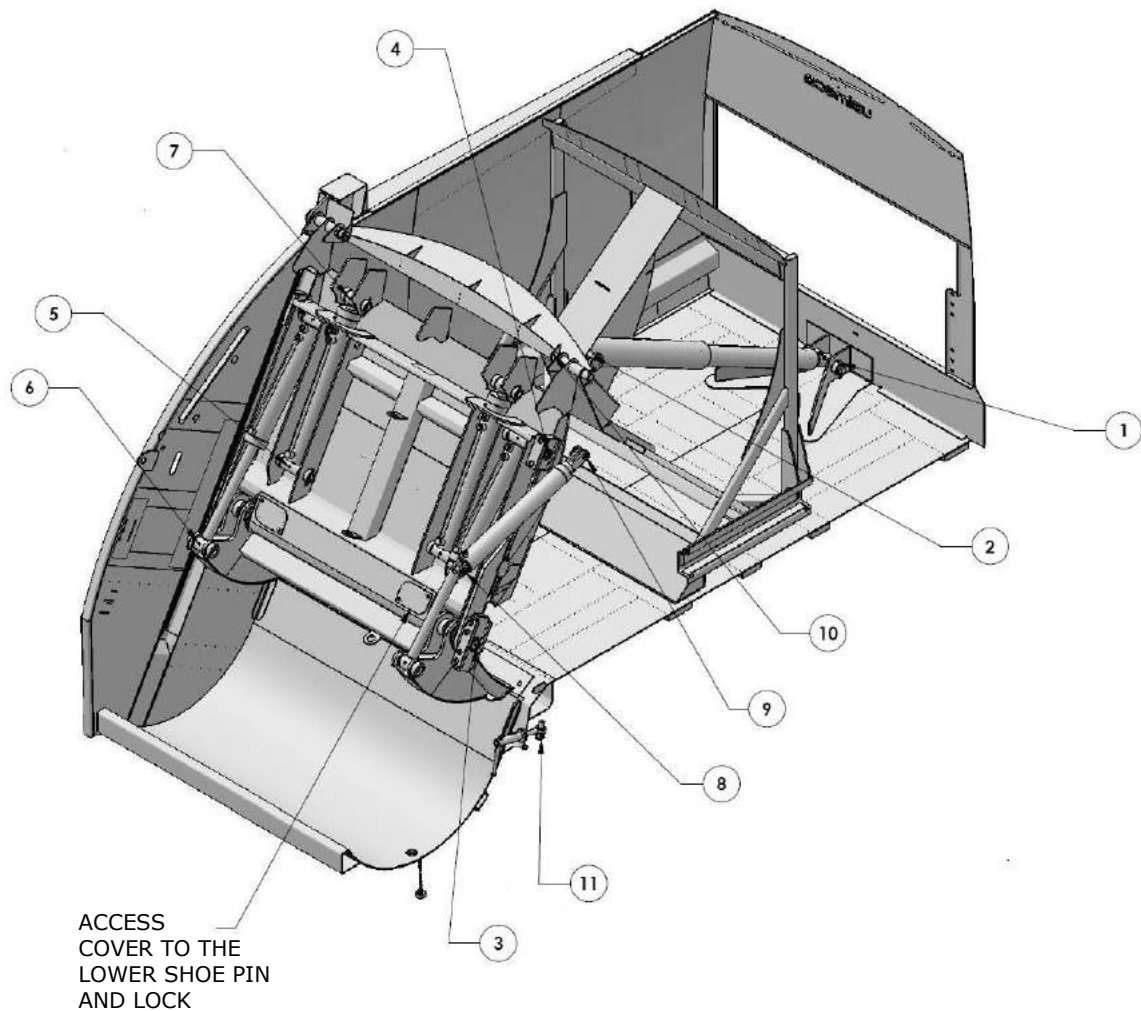


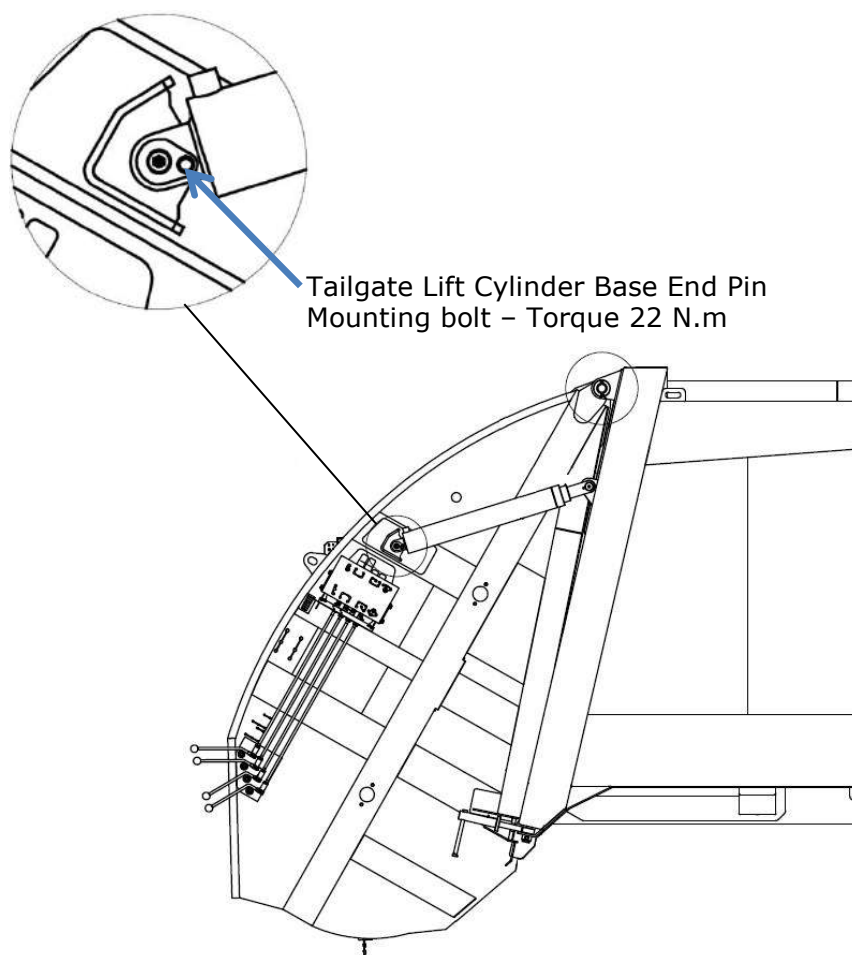
Pins

All pins, cotters and locks should be inspected weekly or every 75 hours. Pins and cotters or locks that show wear should be replaced.

Check the proper positioning of locks for panels and cylinder joint pins, including the inner lock of the lower shoe pin.

PIN MODELS		
POINT	DESCRIPTION	QTY
1	TELESCOPIC CYLINDER ROD END PIN AND COTTER PINS	1
2	TELESCOPIC CYLINDER BASE END PIN AND COVERS BOLTS	1
3	LOWER SLIDE SHOE PIN AND LOCK	2
4	UPPER SLIDE SHOE PIN AND LOCK	2
5	SLIDE CYLINDER PIN (BASE END) AND COTTER PINS	2
6	SWEEP CYLINDER PIN (ROD END) AND COTTER PINS	2
7	SLIDE CYLINDER PIN (ROD END) AND COTTER PINS	2
8	TAILGATE LIFT CYLINDER PIN (BASE END) AND MOUNTING BOLT	2
9	TAILGATE LIFT CYLINDER PIN (ROD END) AND LOCK	2
10	TAILGATE HINGE PIN AND COTTER PINS	2
11	TAILGATE LATCH PIN AND MOUNTING BOLT	2





Inspection

To supplement maintenance, the following inspection service should be put into practice:

- All electrical lighting, directional signaling and brake controls, as well as panel signals, limit switch and automatic throttle advance solenoid should be inspected for operation and the existence of loose wires (daily).



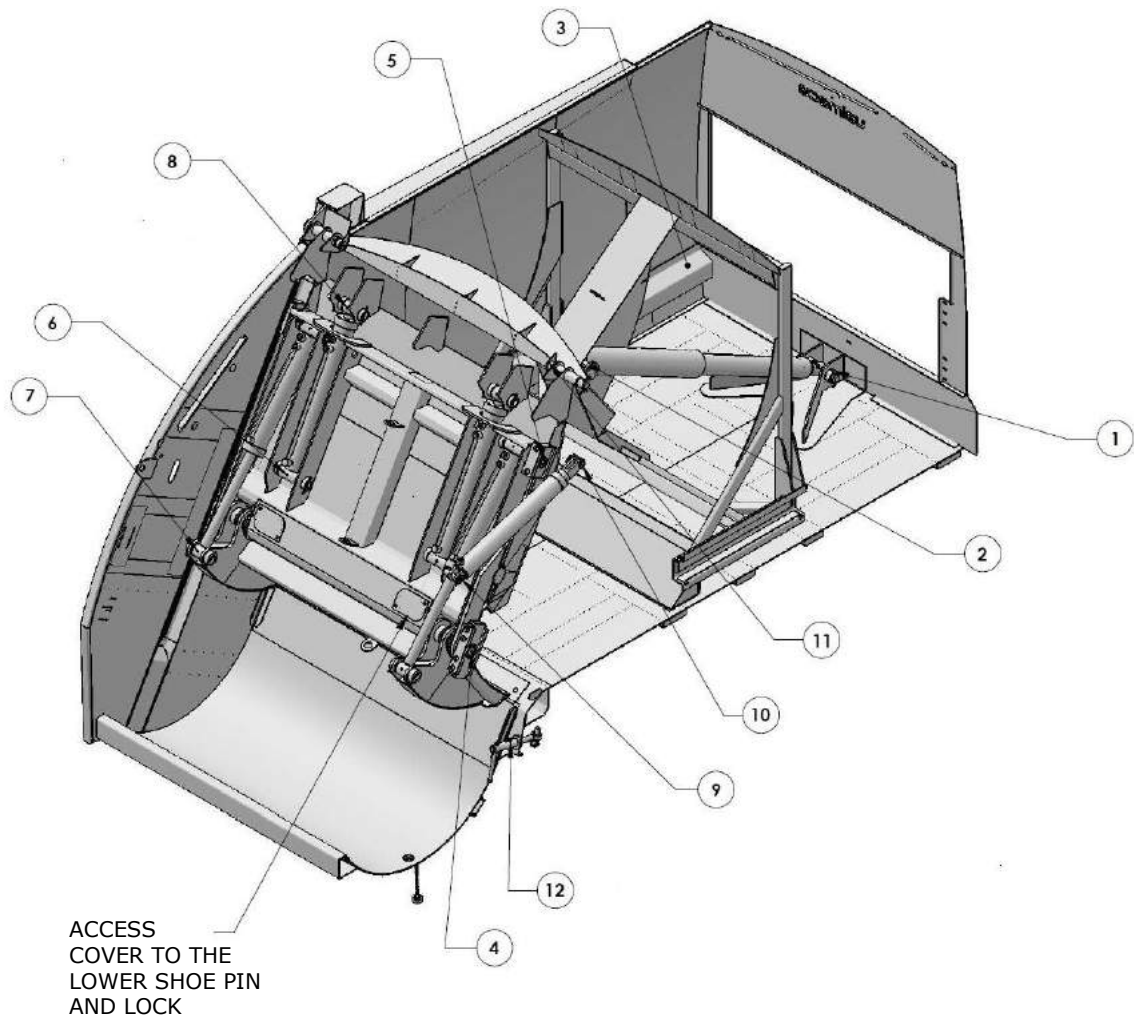
Attention!

If there are damaged components, replace them before putting the equipment into operation (daily check).

Lubrication

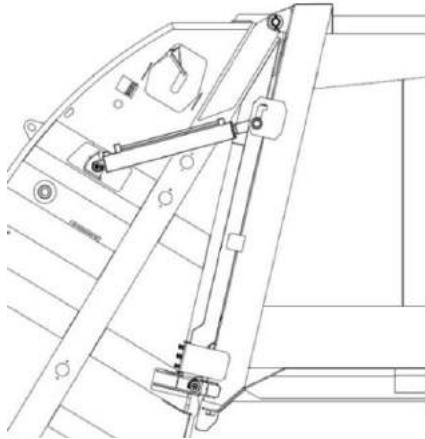
All points highlighted below should be lubricated at least once a week or every 75 hours.

Lubrication with automotive grease weekly or every 75 hours



POINTS FOR GREASE LUBRICATION		
POINT	DESCRIPTION	QTY
1	TELESCOPIC CYLINDER ROD END PIN (grease fitting in the cylinder)	1
2	TELESCOPIC CYLINDER BASE END PIN (grease fitting in the cylinder)	1
3	EJECTOR PANEL GUIDES (APPLY WITH BRUSH)	2 SIDES
4	LOWER SLIDE SHOE PIN	2
5	UPPER SLIDE SHOE PIN (grease fitting in the sweep cylinder)	2
6	SLIDE CYLINDER PIN (BASE END) (grease fitting in the cylinder)	2
7	SWEEP CYLINDER PIN (ROD END) (grease fitting in the cylinder)	2
8	SLIDE CYLINDER PIN (ROD END) (grease fitting in the cylinder)	2
9	TAILGATE LIFT CYLINDER PIN (BASE END)	2
10	TAILGATE LIFT CYLINDER PIN (ROD END)	2
11	TAILGATE HINGE PIN	2
12	TAILGATE LATCH (grease fitting in the latch)	2

Automatic Tailgate Latching



Cleaning

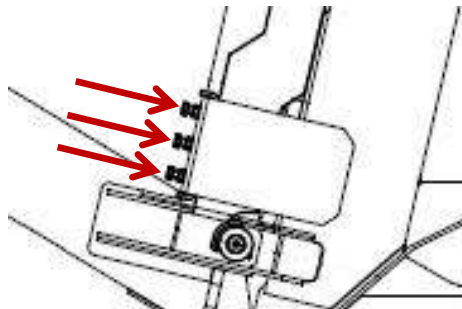
The full extent of latches should be inspected and cleaned, daily, by removing any accumulation of waste found on both sides of the rear loader.

Inspection and Adjustment

The latch assembly, on the right and left sides, should be checked periodically to ensure its proper functioning.

To prevent leachate leakage, check the condition of the tailgate's rubber seal and replace it if necessary.

The system has clearance adjustment bolts to offset wear of the rubber seal. After reaching the tightening limit, the rubber should be replaced.

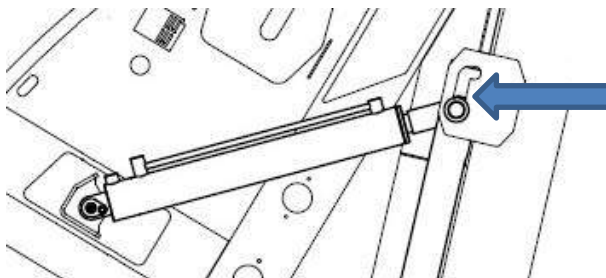


Clearance adjustment bolts

Lubrication with automotive grease weekly or every 75 hours

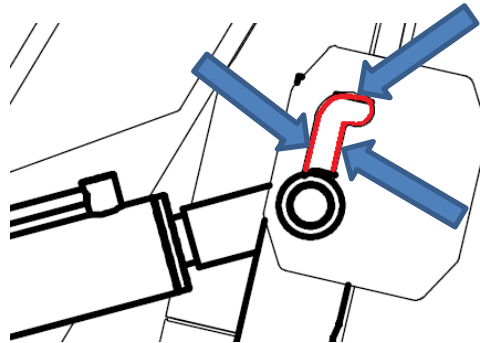
All points highlighted below should be lubricated at least once a week or every 75 hours:

- Tailgate Lift Cylinder Rod End Pins (apply with brush).



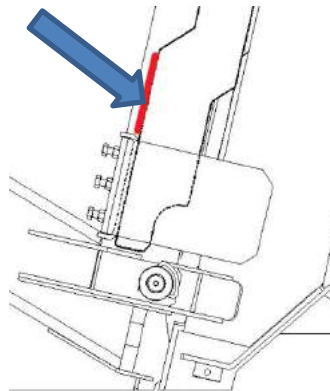
- Body Eyes.

Lubricate the entire length traveled by the pins in the Body Eyes, right and left sides (apply to the area in red with a brush).



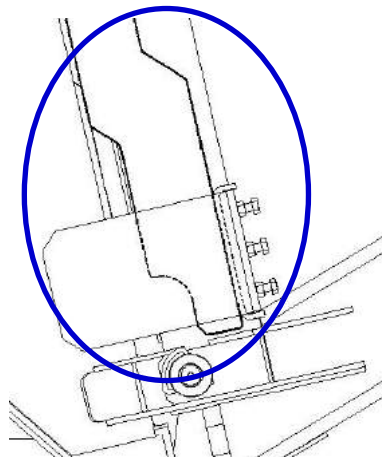
- Machete End of the Right and Left Latches.

Unlock the tailgate, exposing the upper part of the machete end, and lubricate the region that slides into the guide (region in red) with a brush, on both sides of the rear loader.



Attention!

It is essential to keep the area highlighted in blue below clean and free of debris that makes it hard to move the automatic tailgate latches. Otherwise, the system may get locked out, without opening.



Tipper Bar

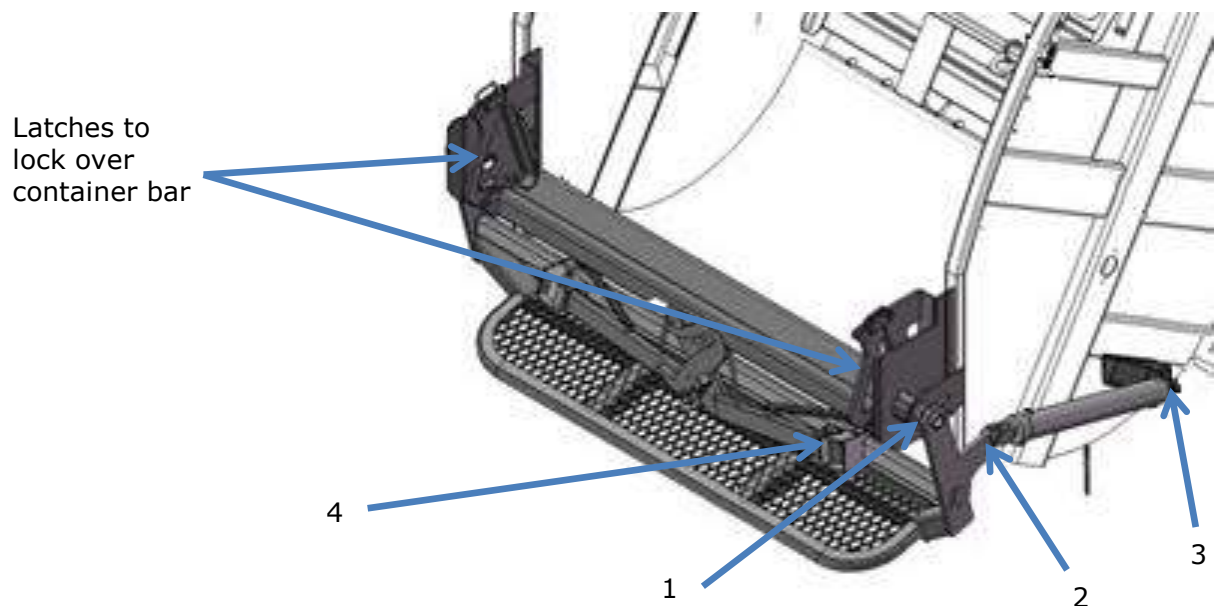
The opening of the arms that dumps the plastic container needs to be adjusted according to the container standard that will be operated. This adjustment is performed via the bolt indicated below, located on the right-side arm.



When the container is docked in a misaligned way, it forces the arm, which can lead to the appearance of cracks in the region. Such problem is prevented by limiting the opening angle of the arms.

All pins and locks should be inspected weekly or every 75 hours. Pins and locks that show wear should be replaced.

The latches to lock over metallic container bar and their locks must be inspected daily and replaced immediately if they are not in good condition.

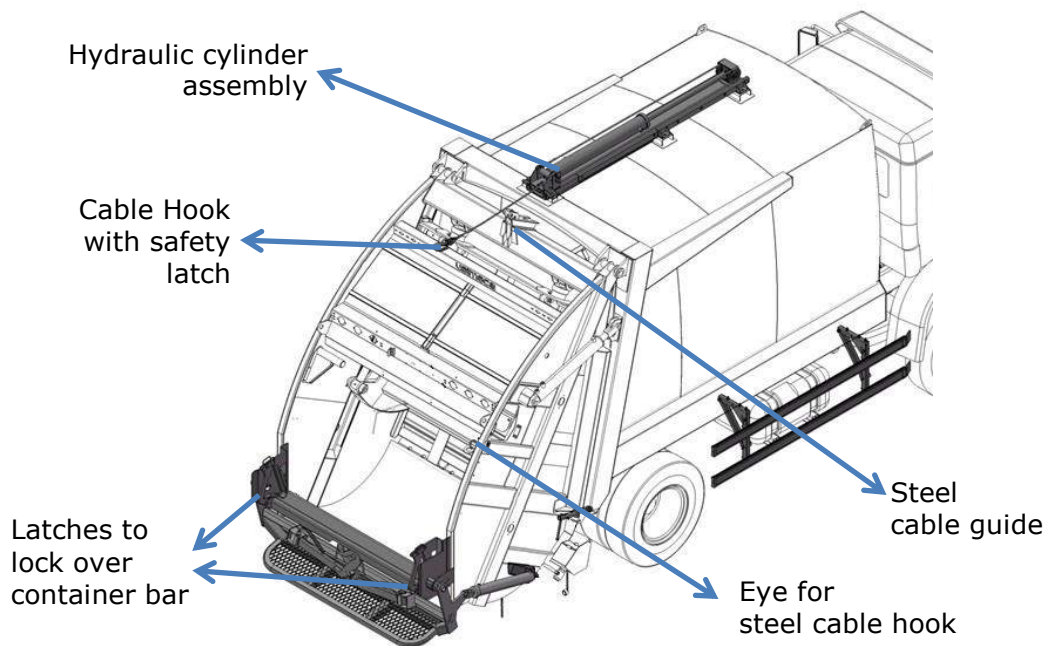


Lubrication with automotive grease weekly or every 75 hours

All points highlighted below should be lubricated at least once a week or every 75 hours:

PINS		
POINT	DESCRIPTION	QTY
1	TIPPER BAR PIN	2
2	CYLINDER PIN (ROD END)	2
3	CYLINDER MOUNT	2
4	ARM PIN	2

Reeving Cylinder



All pins and locks should be inspected weekly or every 75 hours. Pins and locks that show wear should be replaced.

The latches to lock over metallic container bar and their locks must be inspected daily and replaced immediately if they are not in good condition.

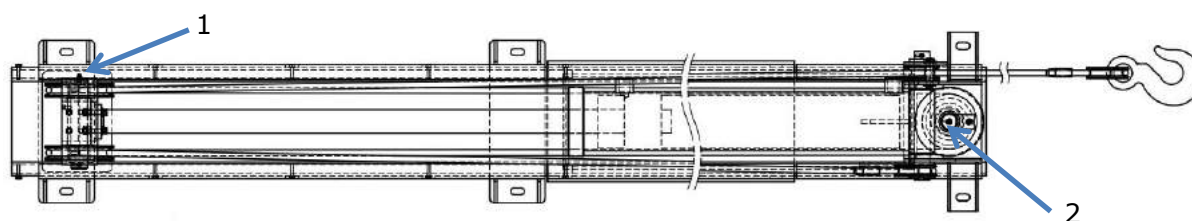
Check the condition of the full length of steel cable daily. Replace the steel cable if damage is observed in any section.

Check the tightness of cylinder mounting bolts to the rear loader's roof weekly or every 75 hours.

Lubrication with automotive grease weekly or every 75 hours

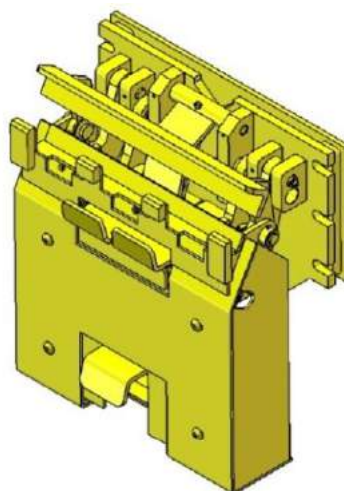
All points highlighted below should be lubricated at least once a week or every 75 hours:

SHAFTS		
POINT	DESCRIPTION	QTY
1	PULLEY SUPPORT PIN ASSEMBLY	1
2	LARGE PULLEY PIN	1



Cart Lifter

To maintain the operational efficiency of the cart lifter, it is indispensable that it be cleaned daily for the purpose of removing all retained impurities.



All pins and locks should be inspected weekly or every 75 hours. Pins and locks that show wear should be replaced.

It is important to keep all grease fittings well lubricated with automotive grease. It should be applied with a grease gun, daily, after the cleaning routine.

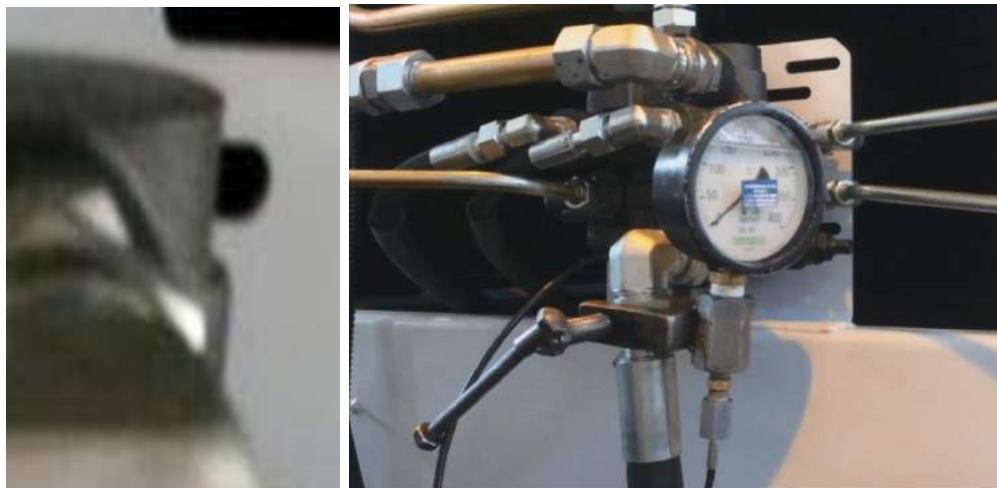
2. Hydraulic System Adjustment Procedure

Models	Main Line Pressure	Push-out Pressure	Rejection
ALPHA 18/20/25/28yd ³	175 bar	165 – 170 bar	230 bar

Parker ML-25 Control Units

Warm-up procedure

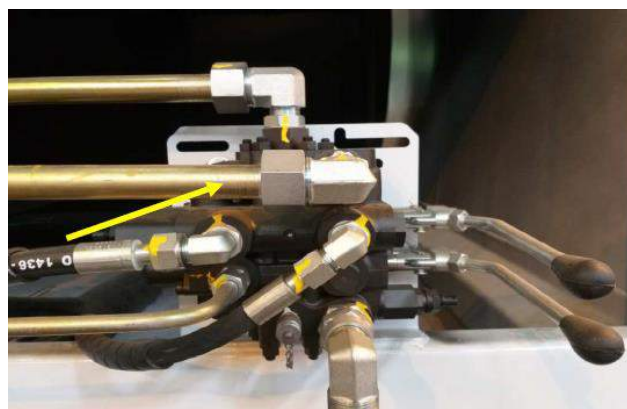
1. Disengage power take-off.
2. Shut off the vehicle engine.
3. Brake the truck.
4. Install a pressure gauge with 0 to 400 bar scale - 1/4" NPT thread – into the quick connect of the front control unit.



Location of the quick connect for the pressure gauge

5. Start the vehicle engine.
6. Engage the power take-off.
7. Move the ejector panel to its start loading position (fully extended ejector cylinder).
8. Before starting the hydraulic system adjustment procedure, the hydraulic oil needs to be at a minimum temperature of 45 °C.

Check the temperature, preferably with a thermometer, in the return tube. The measurement point will be next to the control unit input connection, no more than 20 mm from the connection nut, as indicated by the arrow in the following picture:



If there is no thermometer available, an alternative is to check the temperature in the return tube quickly and practically: as long as it is possible to put your hand on the return tube and hold it there, the temperature is low.

To heat up the hydraulic oil, keep the lever to open the ejector cylinder engaged and manually press the throttle advance button for a few minutes. The time required for this should vary from 5 to 10 minutes, depending on environment conditions, pump / PTO configuration / operating speed, etc.

During this warm-up process, check the temperature at regular intervals. The process will be completed when a temperature of at least 45 °C is reached or when holding the tube with your hand is not possible. It is important for this measurement to be always done at the same point, as indicated in the picture above.



Warning!

Be careful when checking the temperature with your hands, to prevent the risk of injury.



Notes:

The warm-up procedure is very important, because the pressure measured with cold oil can vary by up to 10 bar with heated oil. Therefore, the objective of the warm-up procedure is to approach the temperature that the oil reaches during operation and adjust the pressure properly for operation.

Sweep Panel Rejection Pressure Adjustment

1. Disengage power take-off.
2. Shut off the vehicle engine.
3. Depressurize the hydraulic system (pull and release the tailgate opening lever, located on the front control unit).
4. Replace the front control unit relief valve (limited to 180 bar) with one that is calibrated to over 250 bar.
5. Start the vehicle engine.
6. Engage the power take-off.

7. For Rear Loaders with Manually Loosened Latches (Single Acting Cylinder):

With the tailgate locked, operate the tailgate opening lever while keeping the throttle advance button pressed. Set general pressure to 250 bar (front control unit).

For Rear Loaders with Automatic Tailgate Latching (Double Acting Cylinder):

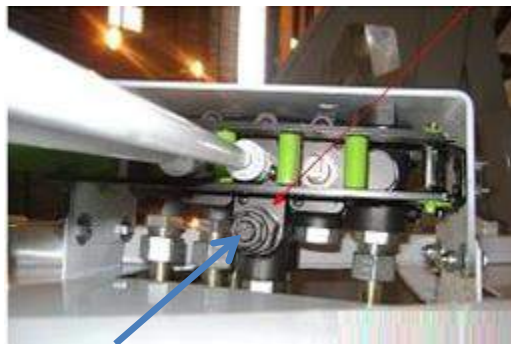
Operate the tailgate control lever to close the tailgate while keeping the throttle advance button pressed. Set general pressure to 250 bar (front control unit).

8. On the rear control unit, operate the sweep panel lever and open the cylinders. With the cylinders extended, set the rejection pressure to 230 bar, checking the pressure in the pressure gauge installed in the front control unit:
 - To adjust the rejection pressure, loosen the lock nut and tighten the valve bolt until it reaches the rejection pressure of 230 bar.
 - When the target pressure is reached, tighten the lock nut.

9. Disengage power take-off.
10. Shut off the vehicle engine.
11. Depressurize the hydraulic system (pull and release the tailgate opening lever, located on the front control unit).
12. Assemble the original relief valve.
13. Start the vehicle engine.
14. Engage the power take-off.



Relief valve
for main line
pressure
adjustment



Rejection pressure
adjustment valve

Main Line Pressure Adjustment

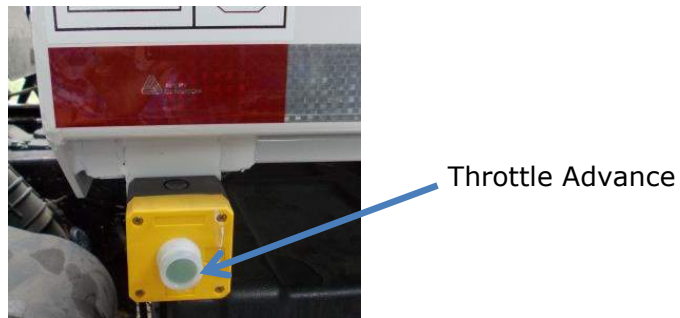
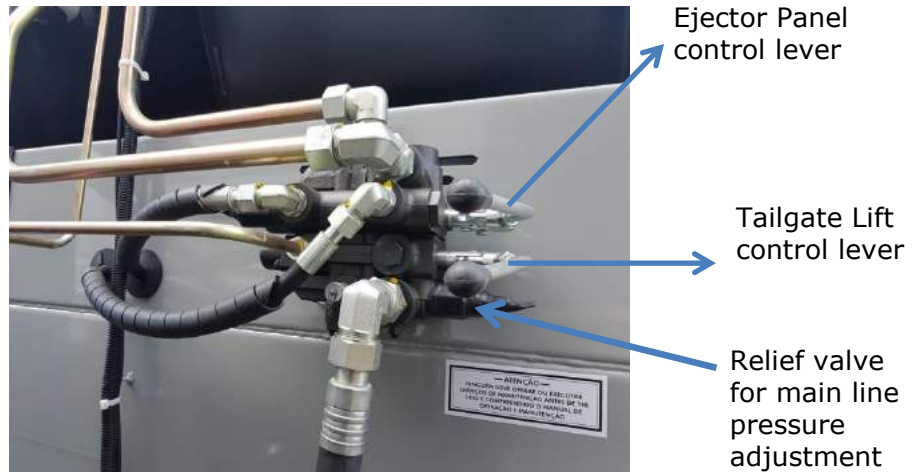
1. For Rear Loaders with Manually Loosened Latches (Single Acting Cylinder):

With the tailgate locked, operate the tailgate opening lever while keeping the throttle advance button pressed to check the general pressure on the pressure gauge.

For Rear Loaders with Automatic Tailgate Latching (Double Acting Cylinder):

Operate the tailgate control lever to close the tailgate while keeping the throttle advance button pressed and check the general pressure on the pressure gauge.

2. Adjust the main line pressure (see pressure table):
 - Loosen the lock nut and turn the valve bolt to adjust main line pressure. Rotate counter-clockwise to decrease.
 - Retighten the lock nut, maintaining the pressure that was set.

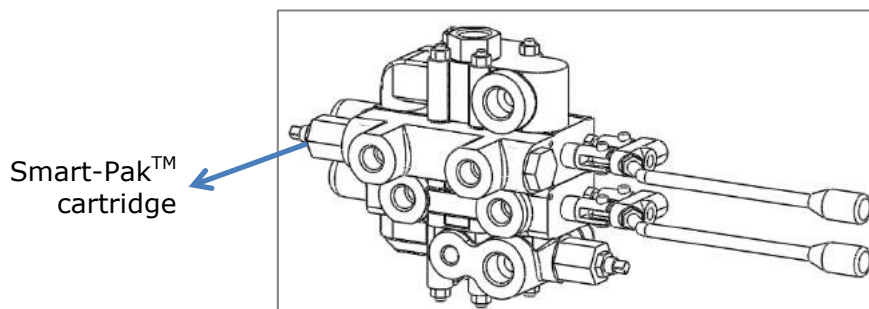


Attention!

It is not necessary to remove the safety lock from the relief valve (elastic pin) to adjust the pressure.

Push-Out Pressure Adjustment (Smart-Pak™)

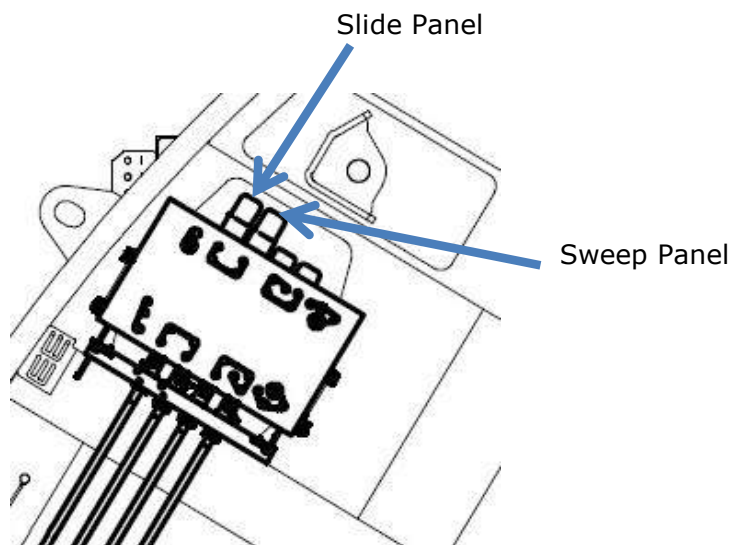
1. While pressing the throttle advance button, operate the ejector panel control lever and check the pressure with the cylinder fully extended.
2. Loosen the lock nut from the dual-adjustment cartridge (Smart-Pak™).
3. Operate the ejector panel (extend the cylinder + automatic throttle advance button).
4. Adjust the push-out pressure (see table): rotate the valve bolt until the desired pressure is reached (clockwise increases pressure / counter-clockwise decreases).
5. When the pressure is reached, tighten the lock nut of the Smart-Pak™ cartridge.



Sweep or Slide Kick-Out Adjustment

If the sweep or slide panel control lever kick-out is not functioning properly (semiautomatic packing cycle), adjust it:

1. Remove the cover from the sweep section of the rear control unit.
2. Using an Allen wrench, turn the adjustment bolt clockwise to increase the kick-out pressure. We recommend tightening the bolt in increments of $\frac{1}{4}$ turn.
3. For each adjustment, operate the sweep panel control lever to see if it stops automatically.
4. If kick-out is functioning properly, the recommendation is to repeat the procedure ($\frac{1}{4}$ -turn increment) until the lever does not release.
5. When the kick-out doesn't happen, rotate $\frac{1}{4}$ turn counter-clockwise and see if the release happens properly when opening and closing the cylinder.
6. Repeat this procedure for the slide panel.
7. Check operation of the complete semiautomatic cycle – sweep and slide. The kick-out should occur without delay. If everything goes well, place the covers on the sweep and slide sections of the rear control unit again.
8. Check the main line pressure.



Finalizing the Adjustments

- Remove the pressure gauge.
- Seal front control unit valves with heat shrink seal.



Note:

*The sweep or slide control lever kick-out adjustment should be done **after** adjusting the main line pressure.*

Sauer-Danfoss Control Units

Warm-up procedure

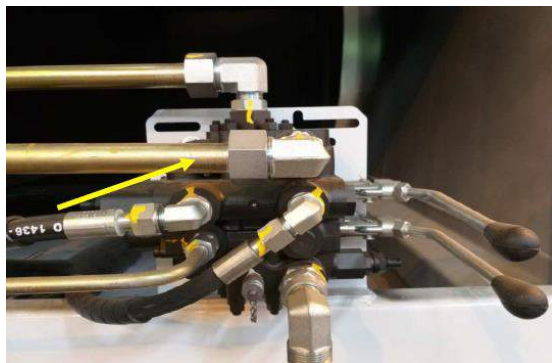
1. Disengage power take-off.
2. Shut off the vehicle engine.
3. Brake the truck.
4. Install a pressure gauge with 0 to 400 bar scale - 1/4" NPT thread – into the quick connect of the front control unit.



Quick connect to the pressure gauge

5. Start the vehicle engine.
6. Engage the power take-off.
7. Move the ejector panel to its start loading position (fully extended ejector cylinder).
8. Before starting the hydraulic system adjustment procedure, the hydraulic oil needs to be at a minimum temperature of 45 °C.

Check the temperature, preferably with a thermometer, in the return tube. The measurement point will be next to the control unit input connection, no more than 20 mm from the connection nut, as indicated by the arrow in the picture below:



If there is no thermometer available, an alternative is to check the temperature in the return tube quickly and practically: as long as it is possible to put your hand on the return tube and hold it there, the temperature is low.

To heat up the hydraulic oil, keep the lever to open the ejector cylinder engaged and manually press the throttle advance button for a few minutes. The time required for this should vary from 5 to 10 minutes, depending on environment conditions, pump / PTO configuration / operating speed, etc.

During this warm-up process, check the temperature at regular intervals. The process will be completed when a temperature of at least 45 °C is reached or when holding the tube with your hand is not possible. It is important for this measurement to be always done at the same point, as indicated in the picture above.



Warning!

Be careful when checking the temperature with your hands, to prevent the risk of injury.



Notes:

The warm-up procedure is very important, because the pressure measured with cold oil can vary to less by up to 10 bar with heated oil. Therefore, the objective of the warm-up procedure is to approach the temperature that the oil reaches during operation and adjust the pressure properly for operation.

Sweep Panel Rejection Pressure Adjustment

1. Disengage power take-off.
2. Shut off the vehicle engine.
3. With an Allen wrench, remove the relief valve cover. With a 3/16" key, raise the pressure to 250 bar (approximately 2 turns).



4. Put the cover back to take the pressure reading.
5. Start the vehicle engine.
6. Engage the power take-off.
7. **For Rear Loaders with Manually Loosened Latches (Single Acting Cylinder):**
Operate the control lever on the front control unit to "open tailgate" while keeping the throttle advance button pressed and check the main line pressure. If the value is other than expected, adjust again.

For Rear Loaders with Automatic Tailgate Latching (Double Acting Cylinder):

Operate the control lever on the front control unit to "close tailgate" while keeping the throttle advance button pressed and check the main line pressure. If the value is other than expected, adjust again.

8. Loosen the rear control unit lock nut to adjust the pressure in the rejection valve to 230 bar.
9. Operate the sweep panel (cylinders extended) to check the pressure. If it is higher than desired, turn the valve counter-clockwise and vice versa.
10. Tighten the lock nut to stabilize the pressure.
11. Disengage power take-off.
12. Shut off the vehicle engine.

Main Line Pressure Adjustment

1. Revert main line pressure to 175 bar. In other words, reverse the turns on the relief valve.
2. Start the vehicle engine.
3. Engage the power take-off.

4. For Rear Loaders with Manually Loosened Latches (Single Acting Cylinder):

Operate the control lever on the front control unit to "open tailgate" while keeping the throttle advance button pressed and check whether the pressure is within the parameters.

For Rear Loaders with Automatic Tailgate Latching (Double Acting Cylinder):

Operate the control lever on the front control unit to "close tailgate" while keeping the throttle advance button pressed and check whether the pressure is within the parameters.

5. Place the relief valve cover to stabilize the pressure.

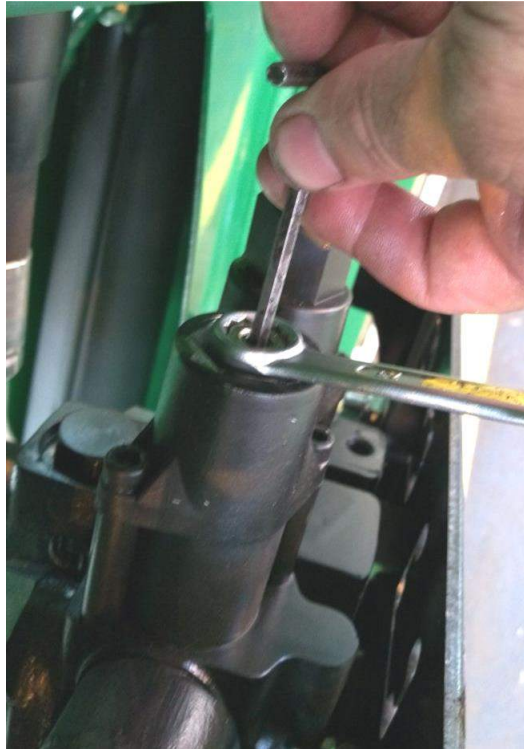
Push-Out Pressure Adjustment

- Do not alter the original factory setting.

Sweep or Slide Kick-Out Adjustment

If the sweep or slide panel control lever kick-out is not functioning properly (semiautomatic packing cycle), adjust it:

1. Remove the cover from the sweep section of the rear control unit with a 1" wrench.
2. Using a 13 mm wrench, unscrew the valve nut and, at the same time, lock the bolt with a 4 mm Allen wrench.



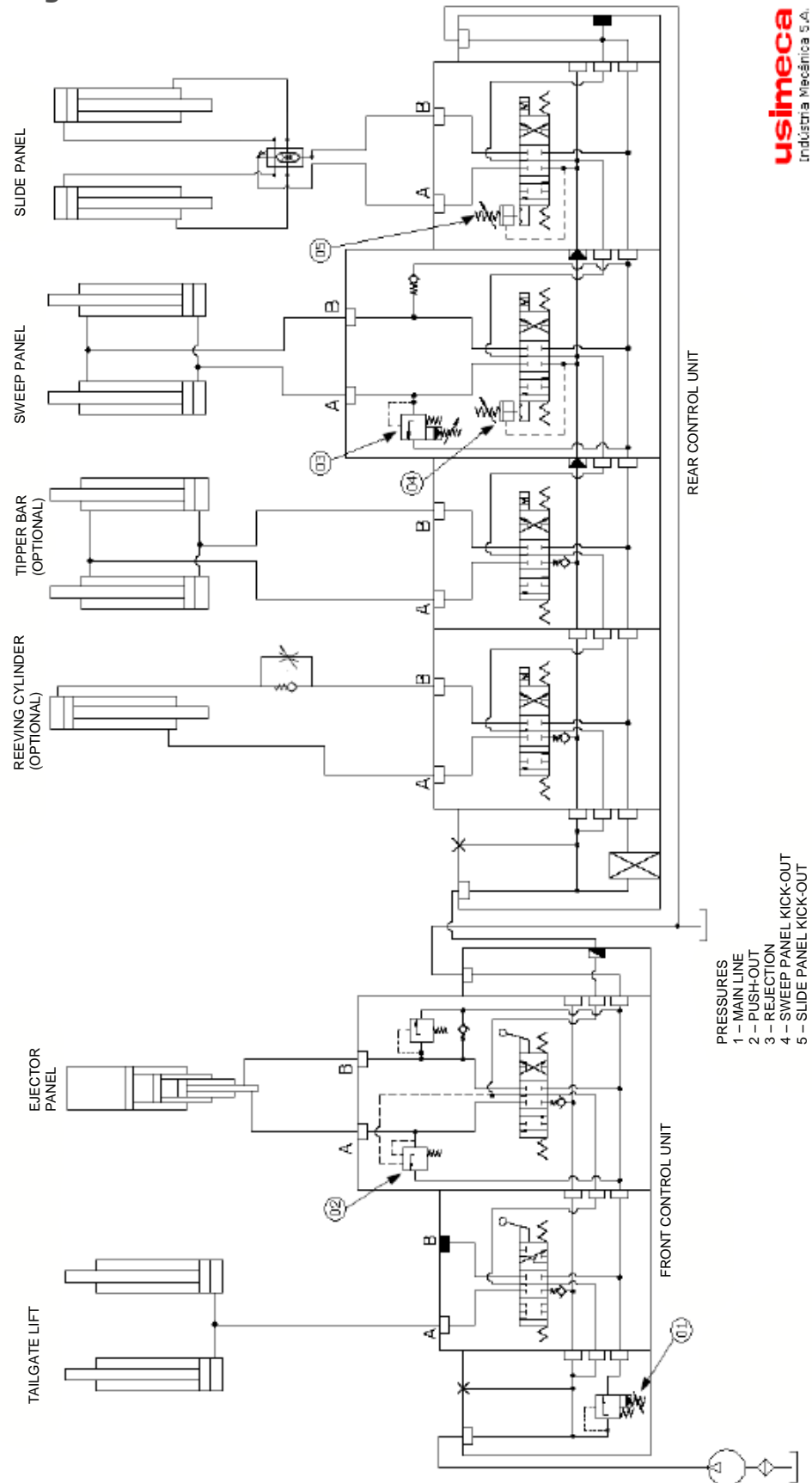
3. Check whether the kick-out is functioning properly, not stopping before time. If necessary, turn the adjustment bolt clockwise to increase the kick-out pressure - we recommend tightening the bolt in increments of $\frac{1}{4}$ turn.
4. For each adjustment, operate the sweep panel control lever to see if it releases automatically.
5. When the kick-out doesn't happen, rotate $\frac{1}{4}$ turn counter-clockwise and see if it functions properly when opening and closing the cylinders.
6. Check operation of the complete semiautomatic cycle – sweep and slide. The kick-out should occur without delay. If everything goes well, retighten the nut to stabilize the pressure and place the covers back on the sweep and slide sections of the rear control unit.

Finalizing the Adjustments

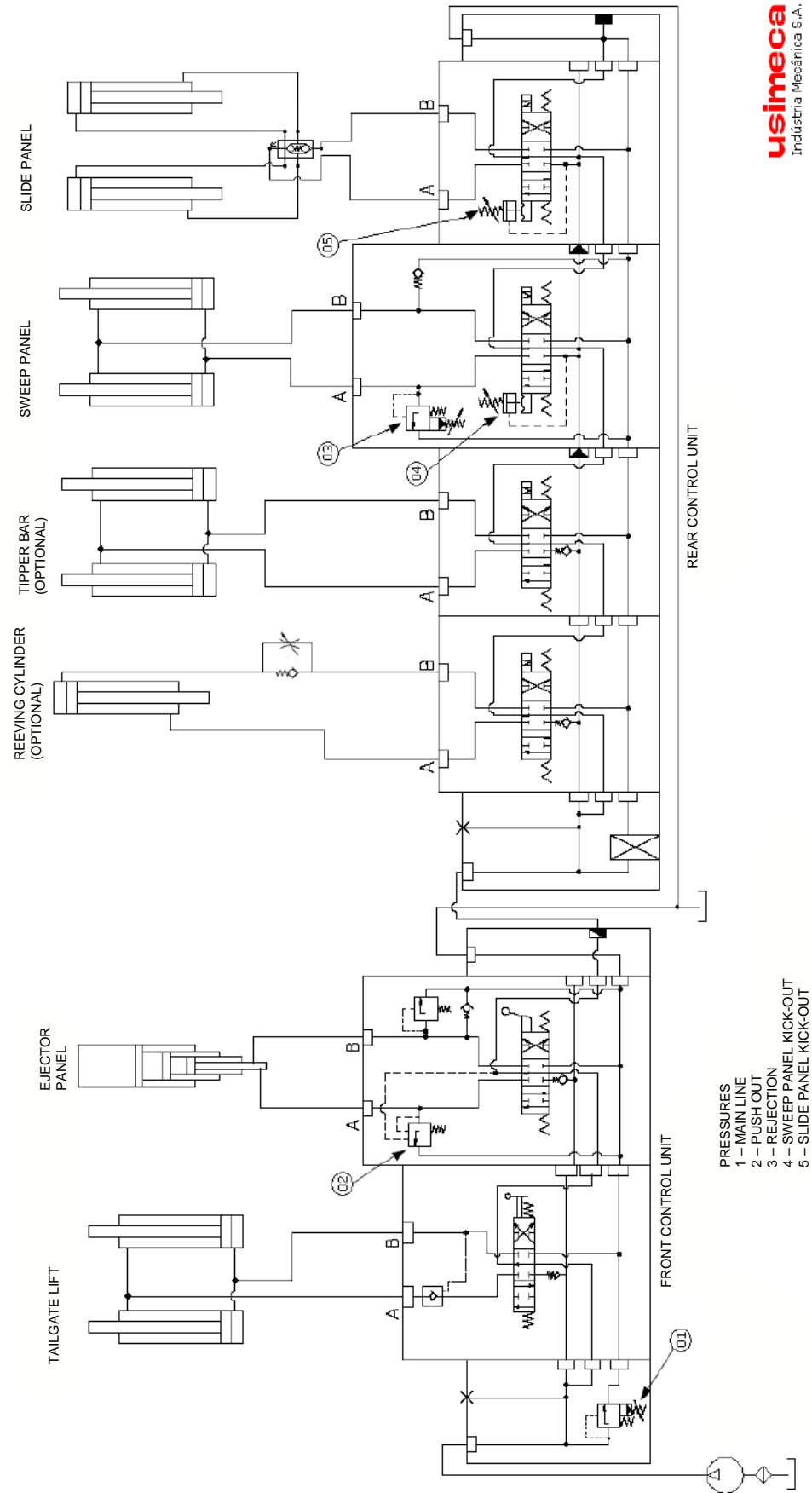
- Remove the pressure gauge.
- Seal front control unit valves with heat shrink seal.

F. Attachments

Hydraulic Diagram - Manual Latches



Hydraulic Diagram - Automatic Tailgate Latching



Lubrication and Internal Washing Control												
Washing		Lubrication										
REAR LOADER MODEL 1												
ID	Mon	Tues	Wed	Thurs	FRI	SAT	SUN	Notes				
P01												
P02												
P03												
P04												
P05												
P06												
P07												
P08												
P09												
P10												
REAR LOADER MODEL 2												
ID	Mon	Tues	Wed	Thurs	FRI	SAT	SUN	Notes				
P11												
P12												
P13												
P14												
P15												
P16												
P17												
P18												
P19												
P20												

HYD. CONNECTIONS / PTO X PUMP / MOUNTING BRACKETS - RETIGHTENING																			
Period from 1 to 15																			
REAR LOADER MODEL 1																			
ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Notes			
P01																			
P02																			
P03																			
P04																			
P05																			
P06																			
P07																			
P08																			
P09																			
P10																			
REAR LOADER MODEL 2																			
ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Notes			
P11																			
P12																			
P13																			
P14																			
P15																			
P16																			
P17																			
P18																			
P19																			
P20																			

CHECKLIST
DAILY INSPECTION ACTIVITIES

usimeca

Rear Loader

Execution Date:

Engine Hour Meter:

ID:

Inspection Activities to be performed DAILY or Before every shift (Mark with X or ✓)	Check	Notes
1. EXTERNAL / INTERNAL CLEANING (after every collection operation)		
Hydraulic Installation		
2. HYDRAULIC OIL: Check oil level.		
Electrical / Pneumatic Installation		
3. LIMIT SWITCH: Check operation.		
4. COMMUNICATION: Check operation.		
5. COMMUNICATION: Check PTO On Signal Light.		
6. COMMUNICATION: Check Cab Buzzer operation.		
7. STROBE LIGHT: Check operation.		
8. ELECTRICAL: Check operation.		
Leachate containment		
9. MANUAL LATCHES: Check condition and lubrication.		
10. AUTOMATIC LATCHES: Inspect and clean the full length of the machete, remove any accumulated waste.		
11. SUMP TANK: Check cleanliness of the Sump Tank.		
Structure		
12. TAILGATE: Check the condition of Track Channels and clean if necessary.		
Accessories		
13. REEVING CYLINDER / TIPPER BAR: Inspect the latches to lock over container bar and their locks.		
14. REEVING CYLINDER: inspect the full length of the steel cable and the cable hook.		
15. CART LIFTER: Check the cleanliness and lubrication of moving parts.		

CHECKLIST
HYDRAULIC SYSTEM COMMISSIONING
(60 hours and 120 hours)
Rear Loader

usimeca

Execution Date:

Engine Hour Meter:

ID:

Start of Operation Activities (Mark with X or ✓)	Check	Notes
1. RETURN FILTER: 1st filter element and seals replacement, upon completing 60 hours.		
2. RETURN FILTER: 2nd filter element and seals replacement, upon completing 120 hours.		
3. PRESSURE FILTER (when equipped): 1st filter element and seal replacement, upon completing 60 hours.		
4. PRESSURE FILTER (when equipped): 2nd filter element and seal replacement, upon completing 120 hours.		

CHECKLIST
SIMPLE MAINTENANCE "S" (75 hours)
Rear Loader

usimeca

Execution Date:

Engine Hour Meter:

ID:

S Activities (mark with X or ✓)	Check	Notes
Hydraulic Installation		
1. LUBRICATION: Pins, Cylinders, Panels, Guides, Joints and Manual or Automatic Latches.		
2. OIL RESERVOIR: Check for Leaks, Level Indicator and Mounting.		
3. SWEEP CYLINDERS: Check for leaks, check cotter pins, rods, bushings and pins.		
4. SLIDE CYLINDERS: Check for leaks, check cotter pins, rods, bushings and pins.		
5. TELESCOPIC CYLINDER: Check for leaks, check cotter pins, covers, rods, bushings and pins.		
6. TAILGATE LIFT CYLINDERS: Check for leaks, check locks, rods, bushings and pins.		
7. FRONT CONTROL UNIT: Check for leaks, General Condition, Operation, Adjustment Pressures, Clearances in Levers and Valve Seals.		
8. REAR CONTROL UNIT: Check for leaks, General Condition, Operation, kick-out Adjustment and Lever Clearances.		
9. BYPASS VALVE: Check for leaks, General Condition, Solenoid, Proper Tightness of the Solenoid Mounting Bolt (should not be overly tight) and Operation.		
10. PTO / PUMP: Check for leaks and Tightness of the Pump Mounting Bolts. Check the assembly and tightness of pump bracket bolts, if any.		
11. PTO / PUMP: <u>Coupled to the Transmission</u> - Lubricate PTO Splines as directed by the PTO manufacturer. <u>Cardan</u> : If the pump has a cardan shaft, check if the universal joints of the cardan shaft are tight in the shafts, properly secured to prevent vibration. <u>REPTO</u> : Lubricate REPTO Splines according to the manufacturer's instructions (Note: Ford, VW and Volvo require lubrication. Not applicable for MB chassis).		
12. PIPING: Check for Leaks.		
13. PIPING: Check Tightness of All Pipe Clamps (if any clamp is missing, install a new one).		
14. HOSES: Check for leaks in Terminals, hose or Seals.		
15. ADJUSTMENT: Check and Adjust according to instructions in the Manual.		
16. HEAT SHRINK SEAL: Check Heat Shrink Seal of the Relief Valve in the Front Control Unit and replace if necessary.		
Electrical / Pneumatic Installation		
17. ANTI-THROTTLE ADVANCE (when equipped): Check Operation / Adjustment.		
Leachate containment		
18. HOPPER: Check Drain Plug.		
19. SUMP TANK: Check Obstructions, Covers, Plugs, Valves, Perforations and Imperfections.		
20. TAILGATE RUBBER SEAL: Check condition of Rubber, replace if necessary. Check the Tightness of Strip Mounting Bolts (if any strip is missing, replace immediately).		
21. TAILGATE LATCHES: Check condition and Lubricate (replace if necessary). Check lock pin and mounting bolt.		

CHECKLIST
SIMPLE MAINTENANCE "S" (75 hours) - Cont.
Rear Loader

usimeca

Execution Date:

Engine Hour Meter:

ID:

Leachate containment		
22. AUTOMATIC TAILGATE LATCHING: Lubricate Joint Pins of Tailgate Lift Cylinders.		
23. AUTOMATIC TAILGATE LATCHING: Lubricate the Body's Eyes.		
24. AUTOMATIC TAILGATE LATCHING: Lubricate the upper part of the machete end on both sides of the rear loader.		
25. AUTOMATIC TAILGATE LATCHING: Check clearance and tighten adjustment bolts if necessary.		
Structure		
26. BODY: Check the Tightness of Chassis / Rear Loader Mounting Brackets Bolts (Front and Rear).		
27. LOWER SHOE PIN: Lubricate, Check the condition of the Pin and Lock (replace if necessary).		
28. UPPER SHOE PIN: Lubricate, Check the condition of the Pin and Lock (replace if necessary).		
29. TAILGATE HINGE PIN: Lubricate, Check Pin and Cotter Pins condition (replace if necessary).		
Accessories		
30. TIPPER BAR: Inspect Pins and Locks; Replace Items that show wear.		
31. TIPPER BAR: Lubricate Tipper Bar Pins, Cylinders Rod End Pin, Cylinder Mount and Arms Pin.		
32. REEVING CYLINDER: Inspect Pins, Locks and Replace Items that show wear.		
33. REEVING CYLINDER: Check the tightness of the Cylinder Mounting Bolts to the Rear Loader Roof.		
34. REEVING CYLINDER: Lubricate the Large Pulley Pin and the Pulley Support Pin Assembly.		
35. CART LIFTER: Inspect Pins, Locks and Replace Items that show wear. Lubricate all articulation points with Grease Fittings.		

CHECKLIST
LIGHT MAINTENANCE "L" (450 hours)
Rear Loader

usimeca

Execution Date:

Engine Hour Meter:

ID:

L Activities (mark with X or ✓)	Check	Notes
Hydraulic Installation		
1. LUBRICATION: Pins, Cylinders, Panels, Guides, Joints and Manual or Automatic Latches.		
2. OIL RESERVOIR: Check for Leaks, Level Indicator and Mounting.		
3. HYDRAULIC OIL: Perform the filtering procedure ("Flushing").		
4. SUCTION FILTER: Replace Suction Filter.		
5. RETURN FILTER: Replace Filter Element and Seals (o-rings).		
6. PRESSURE FILTER (when equipped): Replace Filter Element and Seals (o-rings).		
7. SWEEP CYLINDERS: Check for leaks, check cotter pins, rods, bushings and pins.		
8. SLIDE CYLINDERS: Check for leaks, check cotter pins, rods, bushings and pins.		
9. TELESCOPIC CYLINDER: Check for leaks, check cotter pins, covers, rods, bushings and pins.		
10. TAILGATE LIFT CYLINDERS: Check for leaks, check locks, rods, bushings and pins.		
11. FRONT CONTROL UNIT: Check for leaks, General Condition, Operation, Adjustment Pressures, Clearances in Levers and Valve Seals.		
12. REAR CONTROL UNIT: Check for leaks, General Condition, Operation, kick-out Adjustment and Lever Clearances.		
13. BYPASS VALVE: Check for leaks, General Condition, Solenoid, Proper Tightness of the Solenoid Mounting Bolt (should not be overly tight) and Operation.		
14. PTO / PUMP: Check for leaks and Tightness of the Pump Mounting Bolts. Check the assembly and tightness of pump bracket bolts, if any.		
36. PTO / PUMP: <u>Coupled to the Transmission</u> - Lubricate PTO Splines as directed by the PTO manufacturer. <u>Cardan</u> : If the pump has a cardan shaft, check if the universal joints of the cardan shaft are tight in the shafts, properly secured to prevent vibration.		
15. <u>REPTO</u> : Lubricate REPTO Splines according to the manufacturer's instructions (Note: Ford, VW and Volvo require lubrication. Not applicable for MB chassis).		
16. PIPING: Check for Leaks.		
17. PIPING: Check Tightness of All Pipe Clamps (if any clamp is missing, install a new one).		
18. HOSES: Check for leaks in Terminals, hose or Seals.		
19. ADJUSTMENT: Check and Adjust according to instructions in the Manual.		
20. HEAT SHRINK SEAL: Check Heat Shrink Seal of the Relief Valve in the Front Control Unit and replace if necessary.		
Electrical / Pneumatic Installation		
21. THROTTLE ADVANCE: <u>Conventional Engine</u> - Button / Pneumatic Cyl. / Cable and Bushing / Solenoid / Hose / Limit Switch - <u>Electronic Engine</u> : Button / Limit Switch.		
22. ANTI-THROTTLE ADVANCE (when equipped): Check Operation / Adjustment.		
23. COMMUNICATION: Check operation (replace signal light if necessary).		
24. COMMUNICATION: Check PTO On Signal Light.		

CHECKLIST
LIGHT MAINTENANCE "L" (450 hours) – Cont.
Rear Loader

usimeca

Execution Date:

Engine Hour Meter:

ID:

Electrical / Pneumatic Installation		
25. STROBE LIGHT: Check operation (replace if necessary).		
26. ELECTRICAL: check general installation (Wiring Harnesses and Terminals).		
Leachate containment		
27. HOPPER: check drain plug.		
28. SUMP TANK: Check obstructions, Covers, plugs, Valves, Perforations and Imperfections.		
29. TAILGATE RUBBER SEAL: check tightness of bolts and condition of rubber - replace if necessary.		
30. TAILGATE LATCH: check condition and lubricate – replace if necessary.		
31. AUTOMATIC TAILGATE LATCHING: Lubricate Joint Pins of Tailgate Lift Cylinders.		
32. AUTOMATIC TAILGATE LATCHING: Lubricate the Body's Eyes.		
33. AUTOMATIC TAILGATE LATCHING: Lubricate the upper part of the machete end on both sides of the rear loader.		
34. AUTOMATIC TAILGATE LATCHING: Check clearance and tighten adjustment bolts if necessary.		
Structure		
35. BODY: Check Condition of Ejector Panel Guides (Look for wear or cracks).		
36. BODY: Check the Tightness of Chassis / Rear Loader Mounting Brackets Bolts (Front and Rear).		
37. EJECTOR PANEL: Check Mounting of the Ejector "Nose" Closing Covers.		
38. TAILGATE: Check Overall Condition of Structure.		
39. SLIDE PANEL: Check Overall Condition of Structure.		
40. SWEEP PANEL: Check Overall Condition of Structure.		
41. FIXED PANEL: Check Overall Condition of Structure.		
42. SCRAPER PANEL: Check General Condition (when equipped).		
Paint		
43. FINISH: Check General Condition, Stickers and Cleanliness.		
Accessories		
44. TIPPER BAR: Inspect Pins and Locks; Replace Items that show wear.		
45. TIPPER BAR: Lubricate Tipper Bar Pins, Cylinders Rod End Pin, Cylinder Mount and Arms Pin.		
46. REEVING CYLINDER: Inspect Pins, Locks and Replace Items that show wear.		
47. REEVING CYLINDER: Check the tightness of the Cylinder Mounting Bolts to the Rear Loader Roof.		
48. REEVING CYLINDER: Lubricate the Large Pulley Pin and the Pulley Support Pin Assembly.		
49. CART LIFTER: Inspect Pins, Locks and Replace Items that show wear. Lubricate all articulation points with Grease Fittings.		

CHECKLIST
MEDIUM MAINTENANCE "M" (2700 hours)
Rear Loader

usimeca

Execution Date:

Engine Hour Meter:

ID:

M Activities (mark with X or ✓)	Check	Notes
Hydraulic Installation		
1. LUBRICATION: Pins, Cylinders, Panels, Guides, Joints and Manual or Automatic Latches.		
2. HYDRAULIC OIL: Check Hydraulic Oil Level.		
3. HYDRAULIC OIL: Change Hydraulic Oil after the first 2700 hours. Clean the Oil Reservoir. Replace Suction Filter (as per the recommendations in this manual).		
4. RETURN FILTER: Replace Filter Element and Seals (o-rings).		
5. PRESSURE FILTER (when equipped): Replace Filter Element and Seals (o-rings).		
6. OIL RESERVOIR: Check for Leaks, Level Indicator and Mounting.		
7. SWEEP CYLINDERS: Check for leaks, check cotter pins, rods, bushings and pins.		
8. SWEEP CYLINDERS: Disassemble, Lubricate and Assemble Pins (replace if necessary).		
9. SLIDE CYLINDERS: Check for leaks, check cotter pins, rods, bushings and pins.		
10. SLIDE CYLINDERS: Disassemble, Lubricate and Assemble Pins (replace if necessary).		
11. TELESCOPIC CYLINDER: Check for leaks, check cotter pins, covers, rods, bushings and pins.		
12. TELESCOPIC CYLINDER: Disassemble, Lubricate and Assemble Pins (replace if necessary).		
13. TAILGATE LIFT CYLINDERS: Check for leaks, check locks, rods, bushings and pins.		
14. FRONT CONTROL UNIT: Check for leaks, General Condition, Operation, Adjustment Pressures, Clearances in Levers and Valve Seals.		
15. REAR CONTROL UNIT: Check for leaks, General Condition, Operation, kick-out Adjustment and Lever Clearances.		
16. BYPASS VALVE: Check for leaks, General Condition, Solenoid, Proper Tightness of the Solenoid Mounting Bolt (should not be overly tight) and Operation.		
17. PTO / PUMP: Check for leaks and Tightness of the Pump Mounting Bolts. Check the assembly and tightness of pump bracket bolts, if any.		
37. PTO / PUMP: <u>Coupled to the Transmission</u> - Lubricate PTO Splines as directed by the PTO manufacturer. <u>Cardan</u> : If the pump has a cardan shaft, check if the universal joints of the cardan shaft are tight in the shafts, properly secured to prevent vibration.		
18. <u>REPTO</u> : Lubricate REPTO Splines according to the manufacturer's instructions (Note: Ford, VW and Volvo require lubrication. Not applicable for MB chassis).		
19. PIPING: Check for Leaks.		
20. PIPING: Check Tightness of All Pipe Clamps (if any clamp is missing, install a new one).		
21. HOSES: Check for leaks in Terminals, hose or Seals.		
22. ADJUSTMENT: Check and Adjust according to instructions in the Manual.		
23. HEAT SHRINK SEAL: Check Heat Shrink Seal of the Relief Valve in the Front Control Unit and replace if necessary.		

CHECKLIST**MEDIUM MAINTENANCE "M" (2700 hours) – Cont.****usimeca**

Rear Loader

Execution Date:

Engine Hour Meter:

ID:

Electrical / Pneumatic Installation		
24. THROTTLE ADVANCE: Conventional Engine - Button / Pneumatic Cyl. / Cable and Bushing / Solenoid / Hose / Limit Switch – Electronic Engine: Button / Limit Switch.		
25. ANTI-THROTTLE ADVANCE (when equipped): Check Operation / Adjustment.		
26. THROTTLE ADVANCE: Replace Pneumatic Cylinder Repair kit.		
27. COMMUNICATION: Check operation (replace signal light if necessary).		
28. COMMUNICATION: Check PTO On Signal Light.		
29. COMMUNICATION: Check Cab Buzzer Operation (replace if necessary).		
30. STROBE LIGHT: Check operation (replace if necessary).		
31. ELECTRICAL: check general installation (Wiring Harnesses and Terminals).		
Leachate containment		
32. HOPPER: check drain plug.		
33. SUMP TANK: Check obstructions, Covers, plugs, Valves, Perforations and Imperfections.		
34. TAILGATE RUBBER SEAL: check tightness of bolts and condition of rubber - replace if necessary.		
35. TAILGATE LATCH: check condition and lubricate – replace if necessary.		
36. AUTOMATIC TAILGATE LATCHING: Lubricate Joint Pins of Tailgate Lift Cylinders.		
37. AUTOMATIC TAILGATE LATCHING: Lubricate the Body's Eyes.		
38. AUTOMATIC TAILGATE LATCHING: Lubricate the upper part of the machete end on both sides of the rear loader.		
39. AUTOMATIC TAILGATE LATCHING: Check clearance and tighten adjustment bolts if necessary.		
Structure		
40. BODY: Check General Condition of the Structure, Floor, Stringers and Ejector Panel Guides.		
41. BODY: Check General Condition of Weld Beads.		
42. BODY: Check the Tightness of Chassis / Rear Loader Mounting Brackets Bolts (Front and Rear).		
43. EJECTOR PANEL: Check Mounting of the Ejector "Nose" Closing Covers.		
44. EJECTOR PANEL: Check Guides / Wear Bars / General Condition.		
45. TAILGATE: Check General Condition of the Structure / Loading Sill / Hopper / Hopper Sides / Side Reinforcements (Crossbeams).		
46. TAILGATE: Check General Condition of Weld Beads.		
47. SLIDE PANEL: Check Overall Condition of Structure.		
48. SWEEP PANEL: Check General Condition of Structure.		
49. FIXED PANEL: Check Overall Condition of Structure.		
50. SCRAPER PANEL (When equipped): Check Overall Condition of Structure.		
Paint		
51. FINISH: check general condition, stickers and cleanliness.		

CHECKLIST**MEDIUM MAINTENANCE "M" (2700 hours) – Cont.**

Rear Loader

usimeca

Execution Date:

Engine Hour Meter:

ID:

Accessories		
52. TIPPER BAR: Inspect Pins and Locks; Replace Items that show wear.		
53. TIPPER BAR: Lubricate Tipper Bar Pins, Cylinders Rod End Pin, Cylinder Mount and Arms Pin.		
54. REEVING CYLINDER: Inspect Pins, Locks and Replace Items that show wear.		
55. REEVING CYLINDER: Check the tightness of the Cylinder Mounting Bolts to the Rear Loader Roof.		
56. REEVING CYLINDER: Lubricate the Large Pulley Pin and the Pulley Support Pin Assembly.		
57. CART LIFTER: Inspect Pins, Locks and Replace Items that show wear. Lubricate all articulation points with Grease Fittings.		

CHECKLIST
PREVENTIVE MAINTENANCE 1 (MP1)
(5400 hours)
Rear Loader

usimeca

Execution Date:

Engine Hour Meter:

ID:

MP1 Activities (mark with X or ✓)	Check	Notes
Hydraulic Installation		
1. HYDRAULIC OIL: Change Hydraulic Oil. Clean the Oil Reservoir. Replace Suction Filter (as per the recommendations in this manual).		
2. OIL RESERVOIR: Clean and Replace the Flange O-ring.		
3. OIL RESERVOIR: Clean / Replace breather cap (if necessary).		
4. SWEEP CYLINDERS: Disassemble and Change Seals.		
5. SLIDE CYLINDERS: Disassemble and Change Seals.		
6. SMART-PAK™ CARTRIDGE (anti-backpacking): Change repair kit.		
Structure		
7. SLIDE SHOES: Replace or Invert the Shoes of the Slide Panel.		
Electrical / Pneumatic Installation		
8. AUTOMATIC THROTTLE ADVANCE (WHEN EQUIPPED): Change Pneumatic Cylinder Seals.		
Accessories		
9. TIPPER BAR CYLINDERS: Disassemble and Change Seals.		
10. REEVING CYLINDER: Disassemble and Change Seals.		
11. CART LIFTER CYLINDER: Disassemble and Change Seals.		

CHECKLIST
PREVENTIVE MAINTENANCE 2 (MP2)
(8100 Hours)
Rear Loader

usimeca

Execution Date:

Engine Hour Meter:

ID:

MP2 Activities (mark with X or ✓)	Check	Notes
Hydraulic Installation		
1. HYDRAULIC OIL: Change Hydraulic Oil. Clean the Oil Reservoir. Replace Suction Filter (as per the recommendations in this manual).		
2. TELESCOPIC CYLINDER: Disassemble and Change Seals.		
3. TAILGATE LIFT CYLINDERS: Disassemble and Change Seals.		
4. FRONT CONTROL: Change Repair Kit.		
5. REAR CONTROL: Change Repair Kit.		
6. BYPASS VALVE: Change Repair Kit.		
7. PTO / PUMP: Remove Pump, Check for Shaft Wear, Change Repair Kit.		

CHECKLIST
PREVENTIVE MAINTENANCE 3 (MP3)
(10,800 Hours)
Rear Loader

usimeca

Execution Date: _____ Engine Hour Meter: _____ ID: _____

MP3 Activities (mark with X or ✓)	Check	Notes
Hydraulic Installation		
1. HYDRAULIC OIL: Change Hydraulic Oil. Clean the Oil Reservoir. Replace Suction Filter (as per the recommendations in this manual).		
2. PIPING: Replace Pressure Tube.		
3. HOSES: Replace Pressure Hose.		
4. HOSES: Replace Suction Hose / Clamp.		
5. HOSES: Replace Hoses of the Telescopic Cylinder		
6. HOSES: Replace Roof Hoses.		
7. HOSES: Replace Hoses of the Sweep Cylinders.		
8. HOSES: Replace Hoses of Slide Cylinders.		
9. HOSES: Replace Hoses of the Tailgate Lift Cylinders.		
Structure		
10. SHOES: Replace or Invert the Shoes of the Slide Panel.		
Electrical / Pneumatic Installation		
11. AUTOMATIC THROTTLE ADVANCE: Replace Hose		

CHECKLIST
REFORM (R)
(16,200 Hours)
Rear Loader

usimeca

Execution Date: _____ Engine Hour Meter: _____ ID: _____

Reform (mark with X or ✓)	Check	Notes
Electrical / Pneumatic Installation		
1. ELECTRICAL: Replacing the Electric Wiring Harness.		
Structure		
2. BODY: floor / ejector panel guides assembly reform.		
3. TAILGATE: reform of the hopper assembly / mount / panels.		